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fueloil & oil heat

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REPRESENTATIVES AND STOCKS IN ALL PRINCIPAL CITIES

VOL. 7, NO. 10

fueloil & oil heat

FEBRUARY

1949

Names in the News

David M. Ramsey has been appointed manager, heating products, Jones & Brown, Inc., Pittsburgh 19, Pa. He will supervise sales and distribution of the company's line of Ko-Z-Aire winter air conditioning and RAC controls to regulate volume of cold air intake on warm air furnaces. Mr. Ramsey joins the company after wide experience in heating and sales work. He formerly was with National Radiator Co., Westinghouse and General Electric. He resigned as a district sales manager for Richmond Radiator Co. to assume his new assignment on January 15.

E. M. Ford has been named to replace W. H. Krack as district manager, Los Angeles territory for Penn Electric Switch Co., Goshen, Ind. Former assistant advertising manager at Penn, Mr. Ford has been with the company for the past eighteen years. The Los Angeles office will continue at 736 E. Washington Blvd., handling a complete line of automatic controls.

Harold F. Smidddy, elected a vice president, will continue as general manager of the chemical and air conditioning departments, General Electric Co., Bloomfield, N. J. He joined the company in March of last year as a member of the president's staff and was appointed manager of the chemical department at Pittsfield, Mass. the following July. Three months later he was given additional duties as general manager of the air conditioning department

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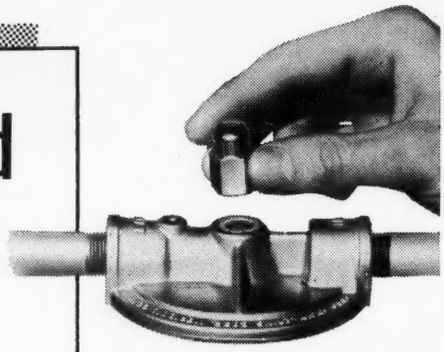
"60-Second Service"

MAKES YOU MORE MONEY SELLING

CUNO MICRO-KLEAN



Nothing could be simpler than installing a Cuno MICRO-KLEAN Oil Burner Filter—or replacing a MICRO-KLEAN cartridge.

One model handles all domestic burner installations and the straight line pipe connections save time and work. Also—

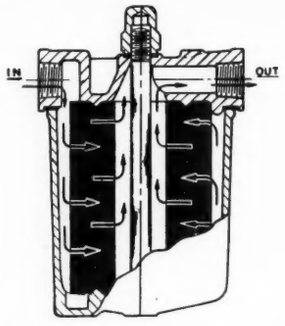
It takes only 60 seconds to remove an old cartridge and insert a new one. Turning a single nut permits removing the housing cover.

Only One Size to Carry

Universal application of a single model saves inventory cost and shelf space, and eliminates lugging several sizes to the job.

FOR FREE BULLETIN, ATTACH COUPON TO YOUR LETTERHEAD

● **Cuno MICRO-KLEAN Filters and replaceable cartridges are manufactured by the company whose filters are used more often in industry than any other brand.**



● **User Satisfaction—"Graded Density in Depth" of micronic-fibre cartridge plus resinous impregnation doubles dirt-collecting capacity, eliminates channeling.**

CUNO

OIL BURNER FILTERS

Easier to Stock . . .
Easier to Install

Cuno Engineering Corporation
855 South Vine St., Meriden, Conn.

Please send information on Cuno MICRO-KLEAN Oil Burner Filters and replacement cartridges.

Name.....

Title.....

Company.....

Address.....

and established headquarters at Bloomfield, N. J. His election to a vice presidency was accomplished at a recent meeting of the board of directors.

Harold H. Leonard, former Detroit district manager, has been advanced to the position of equipment division sales manager, Delco Appliance Div., General Motors Corp., Rochester 1, N. Y. *Carl T. Amrine,* formerly in the service department, has become assistant sales manager, equipment division. Mr. Leonard will continue to make his headquarters at Detroit; Mr. Amrine at Rochester. Both are veteran employees of Delco, with Mr. Leonard enjoying the distinction of being the first Delco employee to enter cooperative training at the university level. He majored in engineering at the University of Cincinnati and later worked in the engineering department, then as a sales engineer. He has headed the Detroit office for nineteen years. Mr. Amrine's experience with the company commenced in 1930 when Delco Light, with whom he had been associated, became a part of Delco Appliance. He has been active in sales and service work.

M. J. L. Schulte has been named general sales manager, Stow Mfg. Co., Binghamton, N. Y., manufacturers of flexible shafting and flexible shaft equipment. His many years' experience include associations in engineering, manufacturing, sales and advertising, principally with the Rawlplug Co. and its subsidiaries.

Edward V. Sullivan assumed on January 1 the position of advertising and sales promotion manager, Lau Blower Co., Dayton 7, Ohio. Formerly an account executive with Hutzler Advertising Agency and assistant to the advertising manager, Sheffield Corp., Mr. Sullivan's duties consist of coordination of all Lau national advertising, contact and sales promotion activities with the company's sales force and distributors. During the war he served four years with the AAF.

Exasperating problem in design

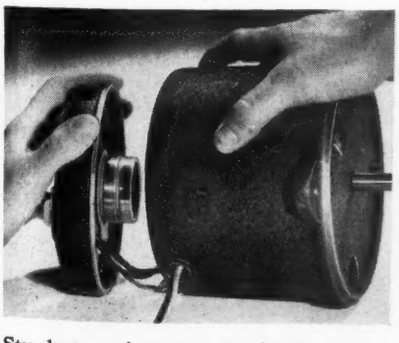
EVERY time you turned around, wartime shirt tails required adjustment. They simply stopped too soon.

Many reputable oil burner manufacturers had a similar experience with "off-brand" motors in the postwar days of scarcity. Thousands of these motors have already stopped short. Thousands more will exasperate more customers.

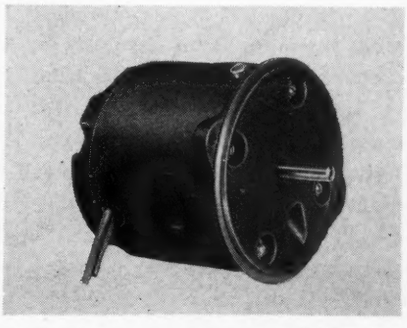
How many oil burners did you install with substitute motors?

At the first sign of trouble replace doubtful power with proved Ohio Motors. Many of the first Ohio Motors built 20 years ago *are still in service.* Dependable performance explains why, through the years, one-third of all oil burners have been powered by Ohio.

Order Ohio replacement motors today from your oil burner manufacturer — direct from us if he cannot supply you. And specify OHIO on your next oil burner order — *for superior performance and complete customer satisfaction.* The Ohio Electric Mfg. Co., 5900 Maurice Avenue, Cleveland, Ohio.



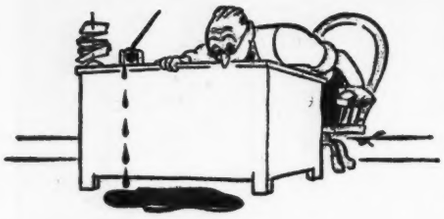
Sturdy two-piece construction improves performance, prolongs life.



Ohio Motors are built to NEMA or other specifications, as desired.

ohio MOTORS

The motor customers write about *enthusiastically.*



Editorial Leaks

President Truman, on January 13, revoked the order of last year "For Conservation of Fuel Oil, Gasoline and Gas," officially ending the oil shortage. The immediate effect of the revocation was to lift the restrictions on government agencies from installing equipment to burn fueloil, gas or liquefied petroleum. gas.

Those who are inclined to believe that government controls are helpful to business should note that it took a flood of oil that nearly drowned the industry to convince officials that there was no stringency.

In the meantime, the Department of Justice asked Secretary Krug to cancel the voluntary oil agreements. The best they could get was the admission that the oil outlook was "substantially improved," but Secretary Krug thought it well to leave the voluntary program in effect until it expires automatically on February 28.

Power put in the hands of government officials never is released so long as they can find any possible excuse to hold it.

◈

One of the most disturbing characteristics of small business, according to a research study done for the Committee for Economic Development, is its fear of competition which drives small businessmen to seek to keep someone out of the market. Though the attitude often stems from a lack of understanding, it is one factor blamed for the declining percentage of the nation's business volume handled by small business.

The small businessman, according to the study, will strengthen himself by learning how to compete for, rather than restrict, markets.

Call it by any other name, and it still means that oilheating dealers (small businessmen) are hurting themselves more than anyone else when they seek restrictive legislation to "protect" their markets. Licensing, bonding, restrictive codes and other "helps" from government are hurdles in the path of the whole industry, not merely those who are intended to be discouraged. Temporary "gains" from restrictive regulations have to be paid for in eventual loss of market.

◈

It might well be emphasized that the love of restriction is not confined to small business. There is a growing tendency on the part of people who should know better, to urge "conservation" of our natural resources for one particular purpose. Transportation is the purpose most often mentioned.

There is no argument about the desirability of conservation—the elimination of waste. There is much to be said against restriction of other uses for one pet application, even though done in the name of conservation.

What these advocates of restriction seem to forget is that their oil industry is in delicate balance. If every oilburner stopped using oil the problem would be much greater than that imposed by supplying the demand. If gasoline were made at the maximum possible rate from every barrel of crude it would glut the market in a matter of days—the disaster every oil man fears.

Economists will deny any desire for such a sudden shift, and plead for a more gradual, orderly change-over to gasoline and diesel oil. This plea is based on the assumption that we are going to run out of oil; an assumption that is vigorously denied by every other branch of the industry.

It would be as logical to argue that all millers should gradually eliminate cake flour from their lines, and turn solely to whole wheat bread flour. It is more nutritious, and bread can only be made from flour. Since we are wearing out our land in wheat production, and the world is depending on us for food, every grain of wheat should be used at its maximum utility. Cake is non-essential. People can eat fruit for desert.

Obviously, both these suggestions for "conservation" are silly. They neglect one important consideration—that of public demand. In this country we are taught that the public can have their natural resources—oil or wheat—for such use as they may desire, brain-trust planners notwithstanding. The controlling factor is price, but anyone who artificially increases the price of fueloil or cake flour to discourage its use should be well prepared for the storm to follow.

It would be helpful if the big brains would think about these things before they issue statements or address the East Gulch Rotary Club with attendant help from their public relations departments.

◈

Labor, which represents a generous piece of the $422 average oilburner installation, and the fueloil supplied to it, has taken another bite out of the industry and its customers in the East. Oil drivers in New York recently won a $2.25 a day raise to bring the total to $14 for an 8-hour trick, time-and-a-half for overtime, vacations and holidays and welfare benefits. This is not intended to appraise the merits of the case, but only to point up some of the problems it presents.

Most dealers qualify as small businessmen. They have a slim cushion on which to conduct their affairs, and often a driver doubles as a serviceman or vice versa. An increase of as much as $2.25 a day to a driver leaves the service department extremely unhappy, so it has become necessary in some instances to grant a sizable increase to all other employees. This has added at least two mills to the cost of the oil delivered and few dealers are in position to absorb such a cost increase.

Customers already are eyeing fueloil prices critically. Every increase must limit the market and discourage users and prospective users.

It probably is worth $14 a day to drive a fueloil truck through traffic in winter weather, or to revive dormant oilburners in cold basements. It must be kept in mind, however, that the rate is for an 8-hour day. The contract makes no allowances for drinking coffee, catching a quick beer or making social calls on company time. It is hoped that drivers and servicemen will prove that they can produce enough in eight hours to justify the rate. Otherwise, the job is going to disappear.

"SCRAM, BROTHER...

..THIS YEAR I GOT WHISTLES!"

"There's nobody kidding me *this* year—not even the old Bogey Man. I got two trucks and I drive one of 'em myself. I *know* just what these VENTALARM signals have done for me. I'm saving so much time—even with the extra customers I got—that my missus thinks I'm gettin' lazy. She likes me gettin' home early though. And so do I. How she used to squawk when she had to wait supper for me! Now she's like a lamb.

Well, there's more to these tank whistles than just settlin' my domestic difficulties. I kept hearin' about 'em but didn't make up my mind to buy 'em until a pal of mine said they were the best —— ——— things he'd ever used. Then I said to myself, 'Joe, if you're ever gonna' grow to be a big oil company, you gotta learn to make decisions.'

So, I shot the works! I equipped all my customers' tanks with whistles. I gave 'em away for free! The VENTALARM people got sizes for all kinds of tank hookups. They also got a quick compression slip fit job (LC model they call it) that installs easy on an old tank in about 15 minutes. And how my customers love 'em! No spills and no bother!

Me? I'm savin' so fast on mileage, time and truck-wear that I figure I got my dough back already. I'm on velvet from here out.

Best thing I ever did! I been a dope or I'd done it long ago!"

available at your supply house

"No more waitin' to get into customers' houses or makin' repeat calls"

"No more wastin' time up and down stairs or listenin' to Mrs. Jones' gab"

"No more gettin' dizzy stickin' oil tanks and worryin' about spills"

"I'm whistle happy with my costs cut 30%!!!"

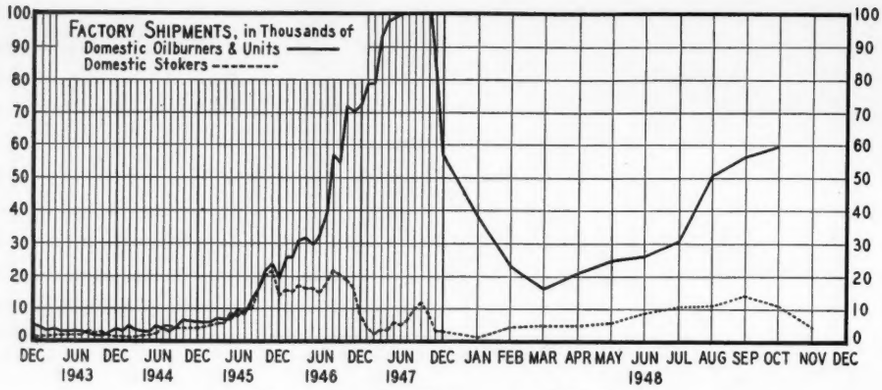
Model LC with slip fit for old tanks.

SCULLY

VENTALARM "Whistling" TANK FILL SIGNAL

T. M. REG. U.S. PAT. OFF

Canadian Licensee—EMPIRE BRASS Mfg. Co. Ltd., London, Ont. **SCULLY SIGNAL COMPANY** 76 FIRST ST. CAMBRIDGE 41, MASS.

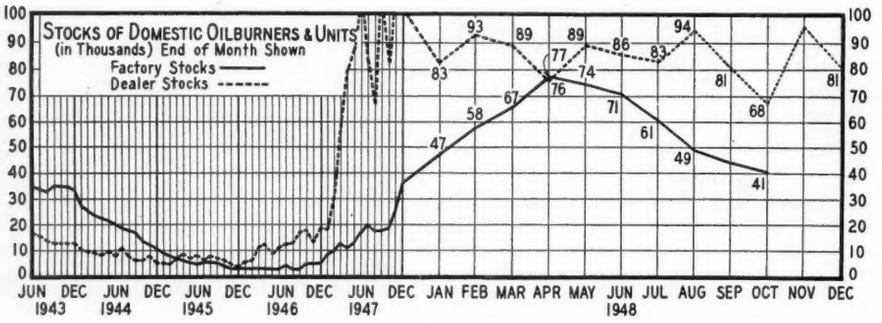

FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
DEC JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1943 1944 1945 1946 1947 1948

Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than the 152 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	ELEVEN MONTHS			NOVEMBER		
	1948	1947	Percent Change	1948	1947	Percent Change
Conversion	269,022	905,571	— 70.3	27,551	64,431	— 57.3
Boiler units	36,106	55,600	— 35.1	3,761	4,573	— 17.8
Furnace units	81,312	176,651	— 54.0	8,265	13,526	— 38.9
All Domestic	386,440	1,137,822	— 66.1	39,577	82,530	— 52.1
Commercial	26,085	50,180	— 48.1	2,198	4,096	— 46.4
Total	412,525	1,188,005	— 65.3	41,775	86,629	— 51.8

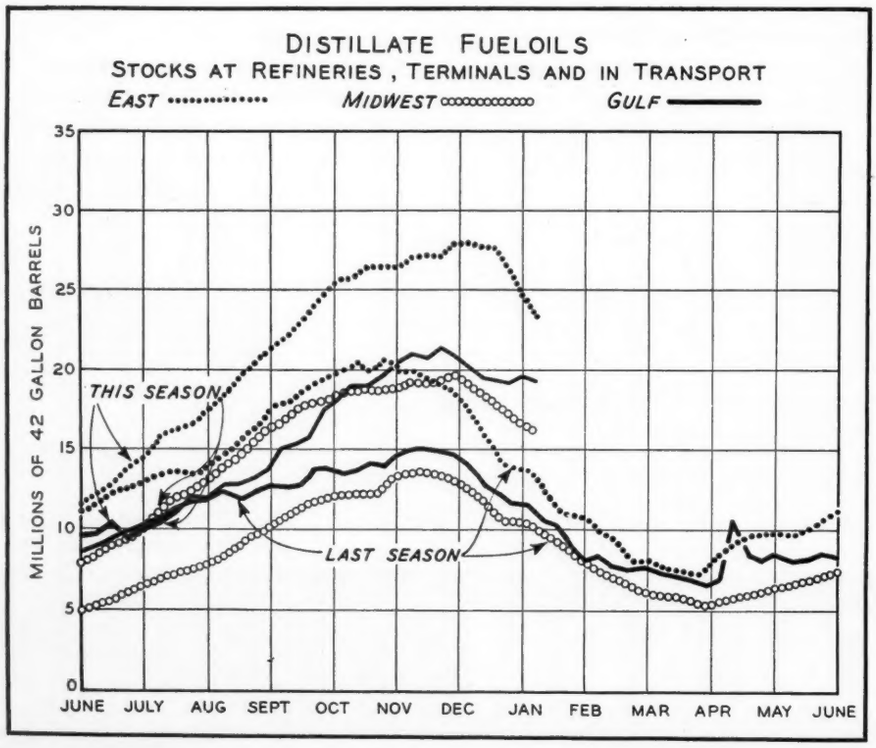

STOCKS OF DOMESTIC OILBURNERS & UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1943 1944 1945 1946 1947 1948

December Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE-BURNERS
Dec. Aver.	$346	$720	$646
Nov. Aver.	347	716	647

Price Index: Conversion Burners: January 1949 is 100%

WHOLESALE				RETAIL			
Dec.	141.6	Six months ago	147.7	Dec.	144.4	Six months ago	150.5
Nov.	144.3	Year ago	143.3	Nov.	144.7	Year ago	148.3



Oilheating Trends

PRELIMINARY ESTIMATES of December installations of oilburners and units are 32,390, down 36% from the same month a year ago. Recognizing that we are going back to a seasonal pattern, December sales were relatively good. Totals for the twelve months, based on simply adding the monthly estimates for the year, were 457,296. This compares with 460,026, as reported in the January issue of FUELOIL & OIL HEAT, which is based on the large annual study made each year.

Based on the monthly estimates, the 457,296 was divided as follows: New Homes 192,794; Replacements 91,500; Conversions from other fuels 173,002.

BURNER STOCKS: Dealer stocks of domestic oilburners and units on December 31, were approximately 81,118. This compares with approximately 108,000 on the same date the previous year. Thus, installations will exceed the number of burners received from factories by about the difference in stock levels. Factory stocks on October 31, latest available data, were 41,270, the lowest point of the year to date.

BURNER SELLING: With the oilheating industry finally free of the many handicaps of the past eight years, dealers on the whole are getting ready to go after burner orders with renewed interest. Among all dealers reporting from various sections of the country this month, 91% say that they are planning for this year an active burner selling campaign. Asked about when they planned to start this campaign, 35% said they are getting it under way this month. Another 3% will start in February, 32% in March, 25% in April, 3% in May, and the final 2% will wait until August. Thus, we see that among the 91% that are going to have campaigns, 95% of that lot will be actively under way within 90 days. The detail of their planning is of considerable interest, and shows that they are in earnest about it. Asked just which of the conventional methods they plan to use, 56% are arranging for newspaper advertising, 51% will use direct mail, 30% will employ telephone canvassers, 48% will have their salesmen do canvassing and 32% say that they will add additional salesmen. Although they were not asked

about radio advertising a few volunteered the information that they will use this medium.

FUELOIL PRICES: With oil now plentiful and margins improved in nearly all markets, 31% of the reporting fueloil distributors say that they are encountering some price cutting in their markets. The other 69% say that so far as they know all dealers are selling at posted prices or above. Among those that say that some of their competitors are selling below posted prices, 19% say that the price cut is one-fourth cent; 71% mention price reductions of one-half cent; and the remaining 10% report cutting by competitors of one cent or more. Among those markets where price cutting is reported (31% of all markets) about a third say that the bargains are being offered by important companies, while the other two-thirds say that it is only the small fellows. Salesmen for oil suppliers and brokers are becoming quite active in soliciting business for the first time in a couple of years. Seventy-one per cent of those reporting say that oil salesmen are calling on them asking for business.

PIPE SHORTAGES: Nearly all of the postwar shortages of materials for oil-heating installations have vanished, with the exception of pipe. Among all dealers reporting this month 53% say they are still having a lot of difficulty getting pipe.

Pipe Shortages

Percent Of Dealers	*Sizes Hard To Get*
3	½ Inch
4	¾ "
16	1 "
31	1¼ "
16	1½ "
30	2 "
1	2½ "
4	3 "
1	4 "

The larger sizes predominate as to shortage as indicated by the table. However, among those dealers reporting pipe difficulties, 60% say they can get pipe in the gray market if they are willing to pay an average price 53% above the nominal price. That 53% average is made up of individual premiums mentioned ranging from 15% to 100%. It is quite clear that most of the dealers in distress are paying the necessary exorbitant prices, because while 71% said they were having pipe supply troubles, only 8% say that they are held up on completing jobs because of lack of pipe.

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
December		12 MONTHS			*December*		12 MONTHS	
1948	*1947*	*1948*	*1947*		*1948*	*1947*	*1948*	*1947*
823	570	2720	9600	Baltimore, Md.	42	138	5761	3197
..	..	..	..	Binghamton, N. Y.	3	3	141	106
..	..	..	..	Bloomfield, N. J.	10	..	..	..
..	1071	..	..	Boston, Mass.	9	15	297	586
140	185	1051	1794	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, N. Y.	16	11	..	207
..	..	..	..	Des Moines, Ia.	29	43	905	970
90	..	..	..	Detroit, Mich.	221	451	6645	9403
55	76	447	844	Elizabeth, N. J.	0	0	21	93
21	42	..	450	Freeport, N. Y.	..	..	..	..
..	..	..	..	Greenwich, Conn.	13	27	270	272
..	..	..	..	Hackensack, N. J.	0	16	..	50
97	256	1373	1996	Hartford, Conn.	..	..	..	..
4	15	188	486	Irvington, N. J.	0	0	..	36
..	..	..	..	Lynn, Mass.	22	5	181	115
23	28	..	..	Meriden, Conn.	..	..	..	..
188	310	2136	3074	Milwaukee, Wisc.	164	81	1862	1347
141	403	1316	2757	Minneapolis, Minn.	48	416	1320	1545
19	21	229	361	Montclair, N. J.	..	..	..	..
21	21	266	519	Mt. Vernon, N. Y.	..	..	..	..
94	30	845	614	New Bedford, Mass.	..	..	..	..
..	55	..	948	New Haven, Conn.	..	..	..	..
0	0	0	1	New Orleans, La.	..	..	..	..
5	34	139	429	New Rochelle, N. Y.	8	11	106	89
..	6750	..	57,588	New York City (total)	..	..	..	..
..	5916	..	48,393	Brooklyn-Queens	..	..	..	..
416	834	4471	9195	Manhattan, Bronx, Rchd	..	..	..	..
95	76	1331	960	Norfolk, Va.	35	44	585	791
207	0	1151	14	Oakland, Calif.	..	..	..	..
..	467	..	3060	Omaha, Neb.	104	39	..	871
5	11	163	280	Orange, N. J.	10	..	25	..
4	19	239	..	Passaic, N. J.	..	..	..	..
17	32	519	1143	Paterson, N. J.	5	1	107	62
429	1433	6305	..	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	5	2	..	134
..	54	..	1049	Portland, Me.	9	1	97	158
294	588	..	9051	Portland, Ore.	102	111	..	1418
16	22	207	335	Poughkeepsie, N. Y.	..	..	..	..
..	99	..	1135	Providence, R. I.	..	5	..	146
..	..	..	..	Reading, Pa.	0	3	40	32
..	81	..	1614	Richmond, Va.	26	39	873	722
94	168	1620	3649	Rochester, N. Y.	..	..	..	..
26	23	330	368	Rockville Center, N. Y.	3	8	200	198
34	25	279	394	Salem, Mass.	7	2	120	44
76	203	1631	3240	St. Louis, Mo.	28	17	..	396
179	274	1632	3380	St. Paul, Minn.	15	41	..	1034
50	104	737	1011	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Wash.	103	255	..	2004
..	..	..	..	Springfield, Mass.	20	35	503	574
29	105	447	473	Stamford, Conn.	..	..	..	..
..	..	..	..	Trenton, N. J.	0	2	31	57
..	..	..	..	Utica, N. Y.	4	45	132	114
212	270	1791	3573	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	5	10	150	96
17	16	227	342	White Plains, N. Y.	..	6	..	96
..	90	..	1371	Wilmington, Del.	18	4	128	101
..	190	..	1767	Worcester, Mass.	..	..	..	..
31	56	322	733	Yonkers, N. Y.	..	..	..	..
3862	6250	27,568	51,565	*Totals*	1074	1876	20,475	20,672
—38.2		—46.5		*Percent Change*	—42.8		—1.0	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

SHEET METAL: Quite a number of dealers have mentioned in recent weeks having trouble getting sheet metal for ductwork. Apparently, this situation is not very acute because among those reporting this month none say that they have oilheating installations that they cannot complete because of sheet metal shortage. On the other hand, 35% of the dealers say that they are having to dig hard to get the material or they are having to pay excessive prices for it. It is obvious that a more free market for sheet metal would be helpful, but principally from the price angle rather than supply.

DEALER COMMENTS: "We're going out after business this year" . . . "We still need a better margin on oil or else get the majors out of retailing" . . . "Oilburner and fueloil dealers cry because the major companies keep their margin down, but when the margin is increased, these same dealers cut their price. I don't blame the major companies, I blame the dealers."

With the amazing Wilson's Hair Filter

YOU GET THE CLEANING without the CLOGGING

A longer free flow of cleaner air

Three factors are responsible for the rapidly increasing popularity of Wilson's H*air* Filters. *First*—*Natural* hair, with its *natural* affinity for oil is a *natural* filtering medium. *Second*—Wilson's scientifically processed h*air* filtering medium catches and holds more dust. *Third*—in Wilson's H*AIR* Filters the trapped dust is collected throughout the entire filtering medium. It does not collect on and clog the inlet surface. This means minimum resistance to air-flow and longer, more efficient service.

More and more businessmen and homeowners are finding that "there's no substitute for natural hair" for air filters. This was proved to be true in exhaustive tests by military technicians during the past war. You can't beat Wilson's specially treated h*air* for maximum cleaning with maximum air-flow.

REMEMBER—Both are HAIR FILTERS

There are two types of Wilson's popular H*air* filters. Both have the exact same hair medium. For *industrial* and *business* installations you want the "Edgeseal" type with patented self-sealing edge. For home use you want the "dressed-up" trim-looking "Honeycomb" type. Order by type—"Edgeseal" for *industrial*—"Honeycomb" for *home.*

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Sell Hard or Lose Ground

Dealers, Manufacturers, Whole Industries Face That Choice

by
Robert Gray

THIS NEW YEAR, 1949, brings to the oilheating industry the finest opportunity that it's had in many years, but along with that opportunity it also brings a challenge. For the first time since 1941 we're free. We're no longer hamstrung by outside limitations, by things that we can't control.

During the war years a lot of our fuel was needed to win the battles, so of course we had to stop selling burners. When the peace bells rang out we discovered that a million families wanted oilburners but we had almost none to give them. Then just when we had caught up with those orders for burners, we ran into the oil shortage. It scared all of us, and particularly our burner prospects, into a very half-hearted year for 1948.

This year, 1949, is the one we have been looking forward to—for so long. It is to be our first real selling year, when we have plenty of everything . . . plenty of burners, plenty of fuel.

Most dealers and manufacturers are thinking along this line, although it's rather hard to abruptly change some of our habits . . . habits that were formed during seven years when the industry did almost no active selling. As spring arrives we can expect to notice more visible evidence that a selling revival is under way. Today there's still a considerable amount of caution, even hesitation in some of our best outfits.

Let's look at a few things that will influence our activities in 1949 and see if they can help steer us along the road to selling.

We must first recognize that our strong competition in 1949 is not going to be within our own industry . . . rather it's going to be within the average family pocketbook where we're trying to get hold of the dollars before they are spent for some other product that has been better promoted and better sold.

We have only to look around us to realize that nearly every industry is in the same fix we are. They have caught up with their easy postwar market and now they are either going to sell hard or stagnate. Any industry that lags behind in this first really competitive postwar year will have tough going in the future.

Campaigns of Other Industries

Fortunately, most of these other industries have not yet started their real selling drives, but a lot of them are getting ready. There were two interesting examples just recently. The motor car industry has discovered that its backlog has been cleaned out except for the three cheapest cars. Yet they know that while folks are no longer buying cars over the counter there are still a lot of antiques on the road. In fact, more than half of all cars registered are over 10 years old. Before the war nearly all cars were junked by the eighth year, so the industry has a big selling job to convince folks again that the oldest jalopies are socially unacceptable, even though they will run. That job is to be done primarily with sales manpower.

Then in Chicago in the fall there was the annual Shoe Fair. It was an exposition and convention with all the new styles and a lot of speeches. The high spot of the convention was the launching of a public relations program that had three primary objectives: (1) to educate ladies to buy more shoes, particularly more colors so as to have a separate pair for each costume; (2) to get men to take more interest in shoes, particularly to want different types for summer and winter; (3) to educate their own manufacturers toward increasing quality rather than reducing prices, now that they were in a buyer's market.

In other words, the capacity of the shoe industry is greater than it was before the war and its members feel that they have to get a larger share of the consumer's income or else reduce their factory operations. They have chosen to slug it out with other industries rather than within their own group. Many industries including our own face that decision.

During the fall I visited a number of our Midwestern manufacturers—a thing I hadn't done since 1941. The trip was an eye-opener. Plant after plant had been very much enlarged, much better equipped with the finest precision machinery, mostly because of their wartime work for the Government. I was in one burner factory that shipped in 1947 more than five times its best prewar burner output and it has a capacity of more than twice that high rate. In another I saw two assembly lines, one that could drop a complete furnace-burner unit every seven minutes. And there's nothing shoddy about this postwar stuff—it's much better quality on the whole than we had before the war.

So our industry is either going to sell hard to get volume for those plants or start a dogfight.

People Can Afford More

It's true that average living standards are higher than before the war; people can afford to buy more things. But how much higher? Average incomes are up about 134% from 1939, but when you deduct the withholding taxes and other items, the take-home pay is up only about 93%. The cost of living is up 74%, so the difference between the two figures is the measure of higher living standards today. That increase is all to the good, but it doesn't hold a candle to

the rate of increase in the capacity of factories that turn out all the many things that compete with oilburners for the family dollars.

In a way, it's fortunate that most industries have become so production minded during the past few years that they are slow in waking up to this new and serious challenge. That is, we're fortunate if our own industry comes to life ahead of the herd.

In the family of one of my friends last fall I was watching an example of how far the idea of selling has fallen by the wayside. He bought an old farm house up in the country north of New York and moved up there. The inside of the place had been modernized in a Colonial style. It was obvious that he needed several things but among the expensive items the most important seemed to be a living room rug that wouldn't clash with its surrounding color scheme.

But his wife also knew that she wanted some other expensive things, particularly a Bendix washer and ironer arrangement and one of these new vertical deep-freeze units made by Philco. He agreed that she could take her choice of the three and order it right away. It took her two weeks to make up her mind and decide on the deep-freeze.

In six months no salesmen has ever been around the place trying to sell them anything, even though there was publicity when they bought it. If a rug man or a washer man had come and talked for five minutes he could have taken an order. It is very clear that selling today is at its lowest ebb, but it's just as certain that within a year we'll be seeing a significant revival in many industries.

Our Special Problems

Our industry has its own peculiar problems. It was riding on a high level of public approval but we've taken a setback during a year of bad publicity. Folks still like us, but they are less aware of it. Their affections can be stimulated with a little attention.

In eight consumer opinion surveys made between 1940 and 1947, we learned that on the average 45% of families prefer to heat with oil, 33% with gas, 18% with coal, and 4% with electricity or wood. Today 20% of all homes with central heating plants have oilheating—that's four million. There are another five million families that know they want oilheating some day but up to now they have not been convinced that it was the first thing they wanted at any specific time.

Let's call it a "latent" demand—a latent demand that could be turned into orders for more oilburners than the total of all that have been sold up to now. But it can't be done with "latent" selling—that part has to be active and spread on with a little imagination.

Some of us feel that the great flood of bad publicity on the oil shortage calls for a whole new educational job on the blessings of oilheat. Perhaps it's time to again remind everybody, including the families that have it, that it's an even heat, healthful and dependable; remind them that they don't have the old-fashioned work and grime in the basement . . . that they can go away for weekends without anxiety. Tell them again that they don't have to keep starting fires in the mild seasons of spring and fall . . . all of the things we loved to talk about ten years ago. Today they've become too commonplace, like the clock on the mantel.

Revive Specialty Selling

The oilheating industry was built by specialty salesmen preaching the gospel from house to house. The practice had pretty largely died out ten years ago. Prices had fallen so low and commissions so small that the good men shifted to other specialty fields. Could it be that 1949 is an ideal year to revive the lost art of canvassing?

The few dealers who are doing it find it works. Not many salesmen have been around to the houses in the last few years, so folks are not allergic to them. A lot of new families have never heard the oilheat story. Then these dealers find that when a man creates a sale through canvassing he rarely has competition, and he is able to get a good price.

To a considerable extent we have lost the art of creative selling that we possessed ten years ago, and as a result have been concentrating on brand selling. When a man goes canvassing the first and best thing he does is to forget brands until he's ready to close. He does not start by arguing Quiet May versus Fluid Heat, but rather oil versus coal. That might be a healthy revival.

Twenty years ago conversion burners sold for $700 and canvassing salesmen got 20 per cent. Ten years ago they sold for $240 and they got 10 per cent, or about one-sixth as much in commissions per sale. Might it not be intelligent to generally adopt a 15% commission basis for 1949, this year in which we need a strong sales drive?

Last year the average full time oilburner salesmen earned a little over $3,000 on his equipment sales. Of course some of those men also had commissions from oil sales, but many of those who depended only on oilheating would have earned more money as a shoe clerk. Such incomes do not attract salesmen with imagination.

In giving salesmen 15% instead of the customary ten, the extra five can nearly always be added to the sale price . . . it should be. Ask any salesman if he'd rather sell a conversion job at $400 with $40 commission or sell it at $420 with $60 commission. There would only be one answer, and you'd soon find you were attracting creative salesmen. Some few dealers went to 15% last year and found that it helped.

Since our biggest job for the next few months is to sell people on oilheating rather than on burner brands, it would be an ideal time for cooperative advertising by dealer groups, dramatizing the blessings and finer living that oilheat brings. The cost would be modest if it were shared by a dozen dealers. Such advertising would also help to attract good salesmen and support them in their canvassing. Manufacturers might permit the cost of such cooperative dealer advertising to apply against their dealer allowances.

In this discussion of a sales drive for oilheating in 1949 we can visualize a separation of the sheep from the goats. After seven years of doing almost no selling we've come back to working days. A good many dealers and manufacturers will step up to the new requirements. Others will wait for over-the-counter sales like they have been enjoying, and rapidly lose position in their markets. And like dealers, so with whole industries. It isn't too late to make a new year resolution to get our industry's sales drive running in high gear before other industries have lifted all the spare money from the family purse.

Wind, Sun and Snow

Factors Other than Temperature Affect Automatic Deliveries

by
Irving Schell*

IN THE DECEMBER 1947 issue of FUEL-OIL & OIL HEAT, W. K. Phillips[1] of Sherwood Bros., Inc., Baltimore, Md., calls attention to the desirability of ironing out degree days for obtaining a more even spread of deliveries to achieve greater economy.

Admittedly, an important factor in the successful application of any system of degree day operations, is to know at all times as close as possible, the true consumption of heating oil for each serviced house and building. Yet although the widely used degree day system falls short of providing an accurate measure of the fuel consumed, in part because of its disregard of wind, sunshine, and snow cover, no objective evaluation of these weather factors appears to have been derived.

If a perfect system for measuring fueloil consumption were available, the k factor (ratio of total weather units to gallons of fueloil delivered) would remain unchanged, once the customer became settled in his heating habits. From an examination of many records, the latter seems to take place usually in the late fall and lasts through the early spring.

Without a consideration of all the affecting weather elements however, the variations in the k factor, based on the temperature only, must be very marked. Table 1 derived from records kindly provided me by officials of Buckley and Scott, Inc., of Boston and the Boston Office of the Cities Service Company, shows that even for the comparatively stable period: November through March, the range in k (maximum minus minimum) runs for individual cases from a high of 30% of the average k value for the season for this particular case to a low of 8% of the average k for the case with the smallest variation in k. The average value of the k range of the 20 cases shown in Table 1 is 16.4% and corresponds to an average k factor of 3.12.

An important feature of the cases examined is a marked similarity in the upward and downward surges of the k factor of the different cases, despite the fact that they represent different areas and individuals in and around Boston (see for example, Figures 1 and 2). This rather striking fact suggests that the here obtained variations in the k factor are in part produced by a cause common to all the areas and customers.

Wind, Sunshine, and Snow Cover

In the present system of calculating the heat loss, it is assumed that average conditions of wind speed, sunshine, and snow cover prevail and these elements may, therefore, be neglected. However, when the speed of the wind is above the normal and the sun is hidden by thick clouds most or all day, more heat will be carried off and less received from the sun as direct radiation, both calling for an upward adjustment in the calculated heat loss. Similarly, on calm, sunny days, the resulting decrease in the heat loss due to little or no wind and to the compensating gain from the added sunshine will call for a downward adjustment in fueloil consumption. The snow, acting on the one hand as an insulator when piled up around the house and lying on the roof, and, on the other hand, as a reflector of the sunshine onto the house, may always be expected to cut down the heat loss. Thus, the effect of the wind, sunshine, and snow cover, is either to increase or decrease the degree day value obtained from a consideration of the temperature alone except, in some cases, when these factors cancel each other. More commonly, however, the net adjustment in calculating the oil consumption due to the wind, sunshine, and snow cover is upward, especially when the outside temperature is low since then the heat carried off by the wind is the greatest.

The fact that in general an upward adjustment of the degree days is needed to compensate for the effect of the wind and cloudiness, probably explains why some operators raise the degree day base to 70° F. and, or multiply the degree day by a factor greater than unity when the temperature gets below a certain value. This practice has not, it appears,

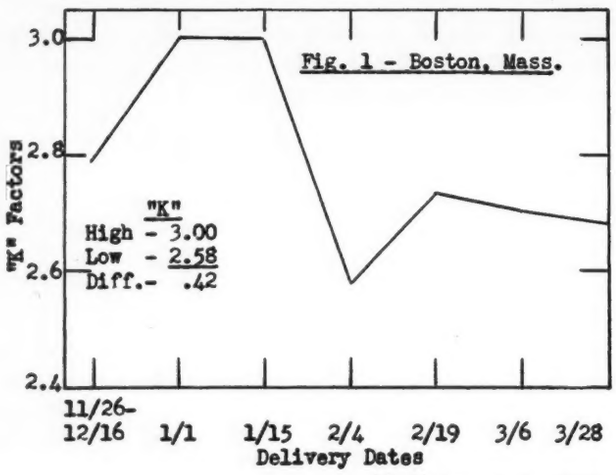
Table I

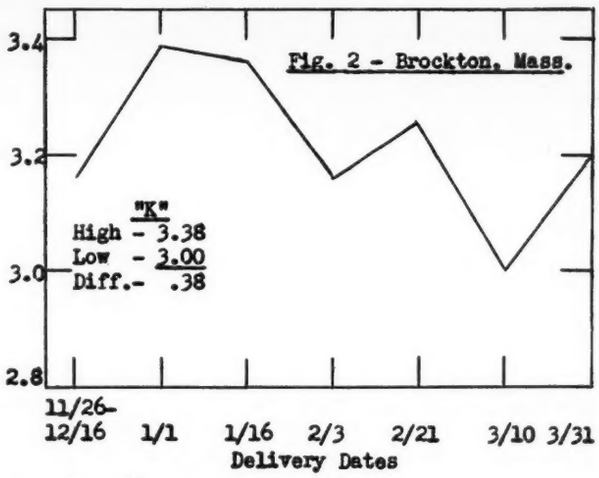
Variations in Range of the k Factor During the Principal Heating Season: November to March as Shown by 20 Selected Cases In and Around Boston During the Winter 1946/47.

			k Factor			
Case	*Location*	*Heating Season*	*High*	*Low*	*Range Actual*	*%†*
1	Boston 1	Nov. 26-March 27	3.00	2.58	0.42	15
2	Boston 2	Nov. 13-March 18	2.52	2.14	0.38	16
3	Boston 3	Nov. 16-March 23	2.85	2.10	0.75	30
4	Boston 4	Nov. 13-March 31	3.72	3.15	0.57	17
5	Boston 5	Nov. 23-March 19	3.58	3.28	0.30	9
6	Boston 6	Nov. 13-March 11	3.09	2.85	0.24	8
7	Boston 7	Nov. 26-March 19	2.30	2.13	0.17	8
8	Medford	Nov. 21-March 27	4.32	3.99	0.33	8
9	Quincy	Nov. 18-March 17	3.29	2.79	0.50	17
10	Auburndale	Nov. 16-March 23	3.24	2.68	0.56	18
11	Brockton	Nov. 25-March 30	3.38	3.00	0.38	12
12	Belmont	Nov. 19-March 17	4.43	3.54	0.89	20
13	Winthrop	Nov. 30-March 30	2.82	2.34	0.48	19
14	Lexington	Nov. 8-March 26	3.45	2.84	0.61	20
15	Wellesley	Nov. 26-March 13	3.37	2.91	0.46	15
16	Wollaston	Nov. 8-March 27	4.27	3.73	0.54	14
17	Auburndale	Nov. 5-March 12	4.02	3.22	0.80	21
18	Dorchester	Nov. 11-March 23	3.56	2.96	0.60	21
19	Wellesley	Nov. 28-March 31	2.74	2.08	0.66	29
20	Lexington	Nov. 9-March 24	3.10	2.79	0.31	11

†Of the average k value for each particular case.

*Director, Schell Meteorological Laboratories, Brookline 46, Mass.





Variation *of the "K" factor during the cold season.*

been too satisfactory, which is not surprising considering that it is based on oversimplified assumptions.

Estimates of Wind Factor

In a recent discussion in *Heating and Ventilating*[2] of the effect of the wind on heating fueloil consumption, Richard Brown estimates that at the average Boston winter temperature of 30° F., the oil consumed on a day "with a very high wind" is between one-third and one-half greater than on a day with a normal wind speed. This estimate was arrived at from an analysis of a house in Wellesley Hills, Mass., a suburban area near Boston. Brown does not define the speed of a "very high wind" but we may assume from the frequency distribution of wind speeds recorded by the U. S. Weather Bureau in Boston, that it is anywhere between 30 and 35 miles per hour for the 24-hour average which is two and a half to three times the normal wind speed in Boston during the winter season. If Brown's estimate is correct and, since, furthermore, the heat loss is the greater the lower the temperature, the heating oil consumed by the wind alone could on certain days run to half the temperature equivalent of those days or even more. However, it would have been wrong to multiply the degree days by a constant factor on *every* cold day for some of the coldest days occur with very little wind.

Distribution Between Oil Deliveries

As a first step in obtaining a quantitative solution of the wind, sunshine, and snow cover on heating fuel consumption, the values of the average daily wind speed in miles per hour, number of hours of sunshine, and ratio of days with a snow cover of one inch or more to the total number of days in each period between deliveries, together with the corresponding values of accumulated degree days and k factor, were presented in detail for the two cases shown by Figures I and II above (see Table 2 and accompanying discussion below).

Boston

The increase in k to 3.00 for the second period from 2.79 for the period before (see Table 2), came with the appearance on the ground of heat-saving snow despite a slight reduction in the average daily value of sunshine to 4.8 hours and a small increase in the average daily wind speed from 12.4 to 12.9 mi/hr.

The unchanged value of k in the third period was accompanied by snow during its entire length and a diminished wind speed to 12.5 mi/hr but with a further reduction in the hours of sunshine to 4.6, suggesting a possible compensation of the greater snow duration and lessened wind by the greater sunshine.

The marked drop in k during the fourth period from 3.00 to 2.58, came with a disappearance of the heat saving snow but with a decrease in the average wind speed to 12.1 mi/hr and an increase in sunshine to an average daily value of 5.5 hours.

The rise in k during the fifth period from 2.58 to 2.74 came with a further increase in the hours of sunshine to a value of 6.2 hours per day but with an increase in the average daily wind speed to 14.3 mi/hr.

The practically unchanged value of k for the sixth period as compared with the one before came with a further increase in the average wind speed to 16.7

Table 2

Degree Days (DD°F), Degree Day K Factor (K(DD)), Average Daily Wind Speed (mi/hr), Average Daily Hours of Sunshine (S'shine), and Number of Days with Snow to Total Number of Days (DS/D) for each period between Deliveries for a Case in Boston and in Brockton with more or less Common Delivery Dates.

BOSTON

Period 1946-1947	*DD°F*	*K(DD)*	*Wind mi/hr*	*S'shine hrs*	*DS/D*
11/26-12/15	500	2.79	12.4	4.9	0/20 = 0.00
12/16-12/31	570	3.00	12.9	4.8	4/16 = 0.25
1/ 1- 1/14	520	3.00	12.5	4.6	14/14 = 1.00
1/15- 2/ 3	570	2.58	12.1	5.5	0/20 = 0.00
2/ 4- 2/18	510	2.74	14.3	6.2	0/15 = 0.00
2/19- 3/ 5	530	2.72	16.7	7.5	7/15 = 0.47
3/ 6- 3/27	580	2.68	12.4	8.1	0/22 = 0.00

BROCKTON

Period 1946-1947	*DD°F*	*K(DD)*	*Wind mi/hr*	*S'shine hrs*	*DS/D*
11/25-12/15	510	3.17	12.6	4.9	0/21 = 0.00
12/16-12/31	570	3.38	12.9	4.8	4/16 = 0.25
1/ 1- 1/15	540	3.37	12.1	4.3	14/15 = 0.93
1/16- 2/ 4	580	3.17	12.6	5.6	0/20 = 0.00
2/ 5- 2/20	570	3.26	14.1	6.9	0/16 = 0.00
2/21- 3/ 9	550	3.00	15.8	7.3	7/17 = 0.41
3/10- 3/30	560	3.08	13.3	8.4	0/21 = 0.00

mi/hr but as against a higher average value of sunshine of 7.5 hours and a reappearance of snow cover.

The slight drop in k to 2.68 in the seventh and last period considered came with a disappearance of the snow but also with a decreased average daily wind speed to 12.4 mi/hr and an increase in the daily sunshine to 8.1 hours on the average.

Brockton

The increase in k in the second period, to 3.38 came with snow during a portion of this period as against a slight increase in the average wind speed to 12.9 mi/hr and a very slight drop in the average value of sunshine to 4.8 hours.

The practically unchanged value of 3.37 for the k factor for the third period came with a decrease in the wind speed to 12.1 mi/hr and a higher value of the snow factor, 0.93 as against a drop of 0.5 in the average number of hours of sunshine, to 4.3.

The drop in k in the fourth period to 3.17, came with a rise in the average wind speed to 12.6 mi/hr and the disappearance of the snow as against a marked increase in the hours of sunshine to 5.6 on the average per day.

The small rise in k to 3.26 for the fifth period occurred with a further increase in the average hours of sunshine to 6.9 hours as against a higher wind speed of 15.8 mi/hr. There was no snow during this period.

The drop in k to 3.00 for the sixth period came with an added rise in the daily average hours of sunshine, to 7.3 and a reappearance of the snow for a part of this period but with an increase in the wind speed to 15.8 mi/hr for the daily average.

The slight increase in k to 3.08 for the seventh period took place with another increase in the average hours of sunshine to 8.4, a sharp drop in wind speed to 13.3 mi/hr as against a complete absence of snow on the ground.

The results obtained suggest that on the whole the influence of the wind, sunshine, and snow cover is consistent with their effects as postulated, more fueloil being consumed when the winds exceed a certain (undetermined) speed and the sunshine is deficient and, conversely, less fueloil is consumed when there is snow on the ground. However, the weighing of the wind, etc., based on average conditions for a whole period is inadequate for deriving a quantitative expression of each of the elements concerned and must be followed by another investigation in which these elements are weighed for each day separately.

Summary and Conclusion

A preliminary attempt was made to derive a more comprehensive system of Degree Days by including in addition to the temperature, also the wind, sunshine and snow cover. Twenty cases believed to be representative of the majority of customers using heating oil were examined of which two were discussed at some length.

The analysis suggests that a quantitative adjustment for the wind speed, hours of sunshine, and snow cover could probably be derived, leading to a more constant value of the k factor and making for better planned loads of fueloil deliveries.

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Sees Oil For 264 Years; Progress Made in Synthetics

OIL SUFFICIENT TO meet world needs for more than two and a half centuries at the present rate of consumption was predicted by Dr. E. V. Murphree, president of the Standard Oil Development Company, at a recent meeting of the Metropolitan-Long Island Group of the American Chemical Society.

As to the United States oil supply, the difficulty encountered in meeting demands last year "has now been overcome, and it is expected that productive capacity will be in excess of demand for a number of years ahead, barring war." The 1947 situation resulted largely from a shortage of steel, which made it impossible to expand petroleum producing and refining capacity as rapidly as desired, he explained.

Meanwhile, exploration for crude oil has been considerably stimulated, accelerating the rate of discovery of new oil deposits, Dr. Murphree pointed out, and new estimates have been made as to the amount of petroleum that should be found in the United States and other countries.

"This survey has indicated," he said, "that the potential yield of crude petroleum of both the United States and the world is quite high, for the world as a whole amounting to some 264 years of supply at the present rate of consumption. The world also contains large deposits of natural gas, oil shale and tar sands which can be used to augment production of oil products. Finally, there are very large supplies of coal and lignite throughout the world.

"These surveys have given added assurance that ample oil deposits remain in the world to supply the world's oil needs for many years, and as these are being used up there are ample alternate sources of supplies for oil products to take their place.

"It is felt," he reported, "that before long it may be possible to produce synthetic fuels on a basis that is competitive with production of oil products from crude petroleum."

Meanwhile a significant reduction in the cost of the synthetic oil now being produced experimentally from coal is promised by new refinements in processing techniques, Dr. Henry H. Storch, chief of the research and development branch of the Office of Liquid Synthetic Fuels, United States Bureau of Mines, Bruceton, Pa., revealed at a meeting of the Pittsburgh Section of the American Chemical Society. Although no commercial quantities of gasoline or light oil have been made from coal, Dr. Storch said that the Bureau of Mines has made definite progress in a comprehensive study of coal and its chemistry aimed at finding the most efficient process for combining hydrogen with carbon in coal to form liquid fuels.

A combination of several procedures currently being developed "may result in a much cheaper process," he declared.

(*Continued on page 94*)

For Objective Margins

Independent Midwest Fueloil Marketer Sees Both Sides

By
Carl Jonswold*

THE PURPOSE OF this article is to offer an appraisal of the fuel oil margin question giving recognition to some of the broad factors involved. This is no time for recriminations but rather for serious study of our problems as an industry. Much has been written and spoken on this question and yet it would appear to me that in many cases the problem has been approached by both supplier and dealer without enough serious thought. Of one thing we can be sure—there is a problem. It should be resolved as quickly as possible and fortunately, it is being resolved in some markets. We have a responsibility to one another as members of an industry to reach decisions on this question in the spirit of good will. We will not permit this question to become a political football if we believe in free enterprise and fair play. It is to be hoped that those who have the power to act will not be too slow and that the dealers will refrain from seeking Governmental aid before exhausting all reasonable approaches. I do not believe this is the real solution for anyone. This question has remained unsolved for too long because it has not been seriously considered by the top management of many supplying companies. Statements of no factual value from high places in our industry do not help. The problem must be approached fairly and realistically. There is little value in a public relations program or in a hope for a united defense of the profit system when such a broad controversy is allowed to fester the relationship within the industry. A reasonable adjustment of differences will permit a united industry to serve the nation and itself.

It is not my purpose to say what a fair margin is although there is a yard stick by which it can be measured. There is no evidence to support the theory of a uniform margin throughout the country. It must also be recognized that the problem cannot be approached from a regional or even state-wide basis. There may be some states where the factors involved are so uniform as to permit a generalization on this subject, but there are undoubtedly many more where the problems within a state are not uniform.

I seriously doubt that gasoline and fuel oil can be compared from a cost of operation standpoint and it is my opinion that state association advocating uniform margins, many of which are gasoline minded, are doing a disservice to the independent fuel oil distributor. The problem must be localized to somewhat uniform operating conditions and fundamentally and ideally the question should be resolved between the fuel oil distributor and his supplier without benefit of fanfare or articles such as this.

Great Diversity in Margins

How are margins determined? Some companies have given serious thought to this subject and some markets seem to reflect a fair approach to the problem. But, with margins varying from $.0084 to $.0450 on furnace oil, we have a variety of explanations some of which are implausible to say the least. There is little defense for the attitude that a distributor should work on a prewar margin or on one not recognizing all of the increased costs of today nor is there a defense of the position that a jobber's margin should be at or near his cost. On the other hand, margins should not be used as an umbrella for poor management. There is such a thing as a reasonable margin for a given locality for an average dealer. There may be within any area outstanding dealers who perform services of value to suppliers for which he should be compensated. A reasonable margin should cover the dealer's cost of operation and allow him enough profit to replace worn out assets at today's costs, plus enough for a reasonable expansion or return on the invested capital.

It would take more space than is permitted here to cover all of the reasons why margins should not be uniform. It can be said quite definitely that the variables are so many that no dealer can look to another market and decide that the margins of that market should be applicable to his area without studying the costs of that area. It is obvious that a rural area of light oil demand per square mile would usually have different costs than some closely settled area of high oil demand. There is usually some variation in cost according to the size of the city, the percentage of oil demand, and the weather involved.

Many Variable Influences

The size of the average delivery may be a factor although this can be offset by the percentage of oil demand, drivers' wages and other factors. Let us consider drivers' wages for instance to see how different conditions can be from one section of the country to the other. A recent survey developed the following average wages by areas:

	Non-Union	*Union*
West	$1.59	$1.53
Midwest	1.21	1.33
Mid Atlantic	1.30	1.52
New England	1.18	1.28

If we look at the situation country wide on another basis of comparison, we have the following results:

	Non-Union	*Union*
Low	$ .68	$1.00
High	1.98	1.87
Average	1.28	1.43

In addition, we must remember that many of these wage scales are predicated on a 48 hour week at straight time whereas the higher scales are quite

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often predicated on a 40 hour week which increases the base rate for comparison purposes because most fuel oil distributors must work their equipment more than 40 hours during their peak season. Another variable is the volume of storage the dealer has. Many distributors have no storage, others have from very nominal storage to large storage in proportion to sales. These factors must be recognized because they play an important part in the distributor's costs. Some studies would seem to indicate that the dealer who has no bulk storage in many cases fares better than the one who has storage. As a general rule, a dealer will not own and maintain storage unless it is necessary and when he does, he should receive recognition for this cost. The average storage would appear to develop from 12 to 15 thru-puts per year and yet some storage will produce as little as 3 to 4 thru-puts per year and this not due to low gallonage, but due to other factors. This again poses a problem which reflects in a dealer's costs.

Another factor in cost is the size of the business. Experience has shown that costs are high up to the first million gallons and reach their most satisfactory level at 3,000,000 gallons before they again begin to ascend. These figures of 1,000,000 and 3,000,000 gallons are somewhat average and will vary according to the other cost factors involved. It is not a uniform scale which can be applied throughout the country. Some supplying companies have seemed to feel that it would be advisable to keep distributors at this maximum range, and we can well understand their viewpoint. It does have several advantages which are intriguing but are they practical, in the public interest and in the interest of the Petroleum Industry? I think not and for the following reasons.

Wrong to Penalize Growth

In this land of opportunity every business man wants his business to grow. As long as he grows, he must serve. If he reaches the point where he does not serve, he will discontinue to grow, but if artificial hurdles are placed in the way of his growth, he will find other means to surmount the problem. He may not reach the real solution, but he will not be stopped without an effort to keep the business growing. I believe it is in the public interest to encourage larger fuel oil distributors because usually the larger distributor gives the better oil heating service. The independent distributors do about 70% of the fuel oil business and 83½% of them service oil burners. Of these dealers, 45% report that they run service at a loss and 25% on a break-even basis. If an audit could be made to charge all cost applicable to this service, I venture to say that more than 70% of it is run at a loss. This is an industry service. It is performed in the interest of oil heating. Close customer attention plus good service at no profit and good products have been the factors which have built favorable public acceptance for oil heating. The smaller dealer has not usually been able to provide these services. The supplying companies by one means or another might have retained a higher percentage than 30% of the retail fuel oil business, but I believe they have acted in the public interest to allow this gallonage to be distributed through channels which would provide the best service and the utmost in good-will for the Petroleum Industry. I believe the supplying companies can serve themselves and the public by keeping these channels of distribution healthy.

In the Same Boat

There is a partnership in this fuel oil business between the supplier and the distributor which should be maintained with full recognition of each partner's interest. The independent distributor realizes I am sure that the supplier has a tremendous investment for every fuel oil customer. The distributor's investment in most cases is not so great and never in direct proportion. Together it is estimated that the Petroleum Industry has $640.00 invested for every fuel oil customer.

The suppliers have been criticized for their large earnings in recent years, but I believe they were justified. Without them they would not have dared to expand so rapidly to meet the demand for petroleum products. If they had failed to meet the demand this winter, I am sure they would have had difficulty with our Federal Government. In my opinion this would not have been desirable. We are aware that the earnings of the

leading companies for 1947 were several times their earnings for 1940 and that their earnings per share were up very substantially. We also know that they earned a very high net after taxes on their sales' dollar. The major oil company executives have justified their position for this record. It would appear, however, that the major oil company executives in many cases do not seem to realize that the independent distributor has the same increased costs, the same problems of purchasing new equipment and carrying accounts receivable at today's values. The only real difference is in the magnitude of the large suppliers' needs as compared to the small distributor, but they both do have the same problem.

This is a time for our industry to unite to solve our problems, to sell our products and to maintain our freedom. Let's live, let live and serve Mr. & Mrs. America.

Asking Acceptance Of Revised Duct Standard

THE STANDING COMMITTEE in charge of reviewing Simplified Practice Recommendation R207-45, Pipes, Ducts, and Fittings for Warm-Air Heating and Air Conditioning, has approved a revision of this recommendation and copies have been mailed to producers, distributors, and users for acceptance or comment, according to an announcement by the National Bureau of Standards.

The recommendation which was originally issued in 1945 established a stock list of pipes, ducts, and fittings for both gravity and forced air heating and air conditioning systems. The proposed revision adds sketches and dimensions for four types of take-off fittings for extended plenum systems.

Copies of the proposed revision may be obtained from the Commodity Standards Division, National Bureau of Standards, Washington 25, D. C.

Smoke Rating Analysis

Effects of Smoking on Domestic Oilburner Efficiency

by
Charles H. Burkhardt[1]
and
Rudolf Ulrich[2]

A report upon a recent research project sponsored by the Bacharach Industrial Instrument Co., Inc., Pittsburgh, and executed by the Walter Hervey Junior College of New York City, with the assistance and cooperation of student research associates Peter Manchisi, Vincent Renda and Alan Smithwick.

The accomplishment of this research study required 3,160 smoke disc readings, 544 CO_2 readings, 560 stack temperature readings and 618 draft readings.

THE ACTUAL EFFECT that smoking has upon the efficiency of operation of a domestic oil fired heating unit is understood in only a general way. With an increase in smoke, a corresponding decrease in the heat absorbing qualities of the boiler is noted. This is evidenced by an increase in the stack temperature. The cause of this being the deposit of soot resulting from the smoking condition.

With the classification of smoke into ratings such as those of the Bacharach-Shell Oil Burner Smoke Scale, the task of determining the effect of smoke on the efficiency of the operation of the heating plant became more possible of solution. The smoke scale furnished a definite means of measuring and classifying the smoking conditions of a unit while under operation. Besides, it enabled changes to be made in the amount of smoke and these changes to be constantly checked for a definite smoke rating during operation. Because of this, a unit could be adjusted for any smoke, constantly checked through smoke disc readings to hold it at that one smoke and, therefore, a study in the form of a rise in stack temperature could be made to show the effect of that smoke rating for any period of time. Thus by taking a representative "on-off" period and conducting a test over a period of days, a representative stack temperature rise could be plotted, the CO_2 could be constantly checked and a definite conclusion in percentage figures could be drawn. This conclusion would show the decline in efficiency for any period of operation caused by any one definite smoke rating.

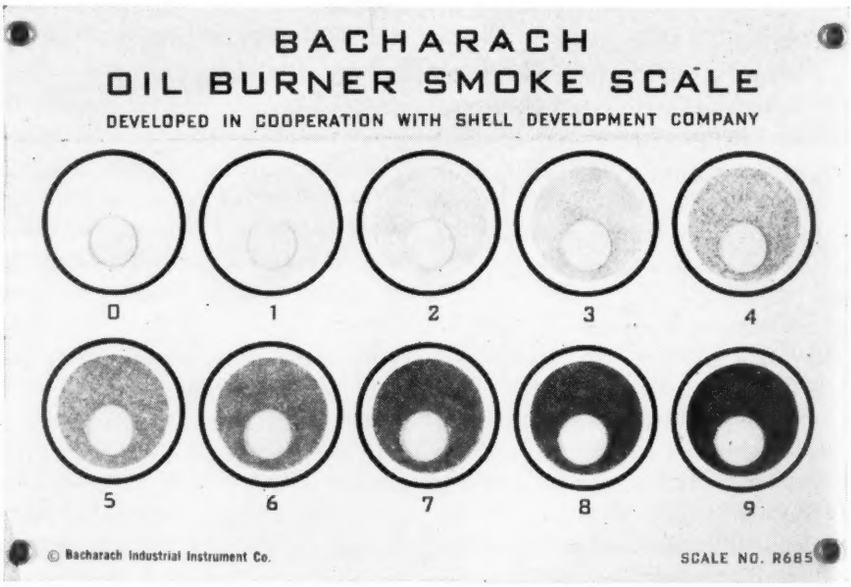
Any increase in the smoke rating could be made and maintained after the preceding procedure and the effect of an increased smoke rating upon combustion-absorption efficiency could be noted and plotted. The difference in the rate of stack temperature rise between two smoke scale ratings would show the effects of increased smoking very clearly upon operating efficiency.

This proved to be the case and the research project developed into a triple purpose operation. These three purposes were:

First, to study, analyze and provide statistical data on the effect of continued or running smoking on the overall combustion-absorption efficiency of the average domestic oil fired boiler. This study furnished data as to what smoking meant in terms of increased stack temperature, the cumulative day by day effect of smoking on stack temperature, and finally a comparison between two different smoke ratings to ascertain the relative effect of lower or higher smoke ratings on stack temperature. This phase furnished ample data to demonstrate the serious effect that any increased or continued smoking has upon the heat absorbing efficiency of the boiler.

Second, to determine the effects of heavy refractory fire brick and soft insulating firebrick in terms of smoke ratings upon the starting cycle of the burner. This phase of the study furnished ample information as to how long a burner would smoke above its adjusted running smoke at the beginning of each operation, and the effect of refractory material upon the length of time it would take to come down to the adjusted running smoke rating.

Third, to analyze the effect of the



Smoke rating chart, *showing zero rating and increasingly dark value up to No. 9. Unfortunately, in reproducing the chart it is not possible to illustrate adequately the variations in shading that characterize each rating.*

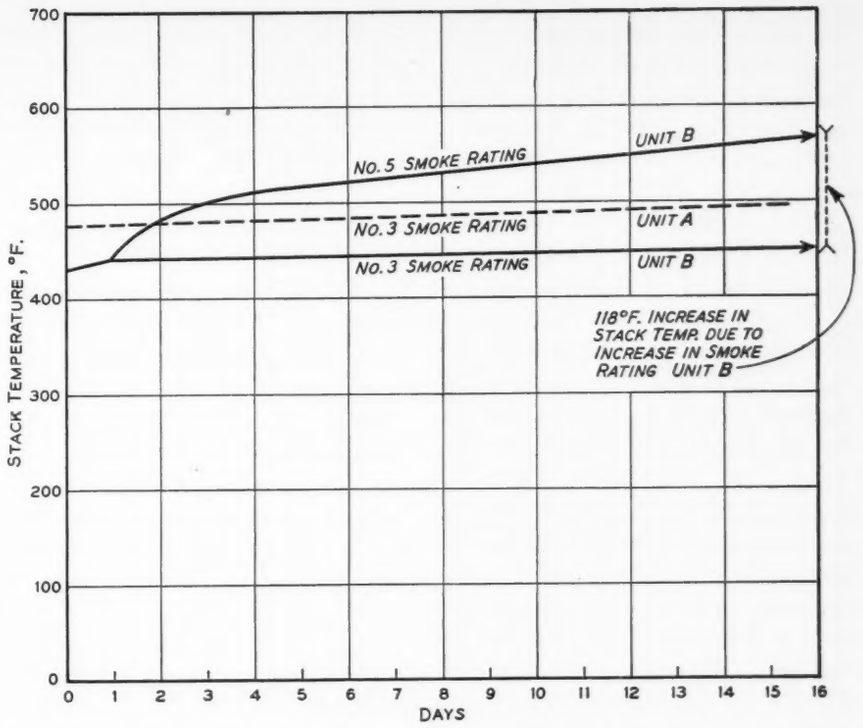
[1]Instructor-in-charge of research testing, Walter Hervey Junior College of New York City. [2]Vice president, Bacharach Industrial Instrument Co., Pittsburgh, Pa., respectively.

pump pressure cut-off on smoking in terms of the time it took the unit to come down to zero smoke rating after it had been shut off. This was further studied from the effect on the closing smoke that the standard, built-in, conventional cutoff valve had, as compared to the burner equipped with a special device designed to achieve a quick cut-off. The difference between the two cut-offs was analyzed in terms of the time it took to drop from the adjusted running smoke rating to the zero smoke rating.

The Effect of Increased or Continuous Smoking

In carrying out the first phase of the project as outlined above, a comparison was made of the effects upon stack temperature of the smoking characteristics of two units. One serving as the "control unit" (Unit A) and operating constantly at a #3 smoke rating throughout the tests. The #3 smoke rating was selected as the control rating due to the fact that with any lower smoke point it was difficult to maintain the minimum 8% CO_2 below which it was not thought wise to drop. With a #3 smoke rating, it was fairly easy to maintain the 8% CO_2. This unit operated throughout the entire testing period as did all other fired equipment, on a twenty minute "on" basis and forty minutes "off." This timing was selected as being representative of the average "on" and "off" periods of the vast number of oil burners in the field.

A second unit (Unit B) was operated at the same #3 smoke rating and then shifted to a #5 rating. Thus this latter



Graph #1. *Curve showing stack temperature increase due to increased smoking, plotted for units "A" and "B." Cast-iron boilers, fired with high pressure gun type burners were used in the tests. Smoke ratings shown were based on the Bacharach-Shell smoke rating chart.*

Chart #1

Unit "B"—Analysis of Effect of Increased Smoke on Combustion-Absorption Efficiency

GPH Rating	GPH Delivered	PSI Pump Pressure	Air-Oil Ratio	Duration of Run	CO_2	Average Draft	Stack Temp.	Smoke Rating	Combustion-Absorption-Eff.
1.65	1.745	120	2550 cu. ft./gal.	1 Day	8.0	.013	430	3	81%
1.65	1.745	120	2300 cu. ft./gal.	15 Days	8.5	.02	435 increasing to 540	5	
1.65	1.745	120	2580 cu. ft./gal.	1 Day	7.9	.015	562	3	76%*

**5% Drop in efficiency after operating 16 days at increased smoke rating #5. Stack temperature increase 122° F.*

Chart #2

Unit "A"—Analysis of Constant Smoke Rating on Combustion-Absorption Efficiency

GPH Rating	GPH Delivered	PSI Pump Pressure	Air-Oil Ratio	Time	CO_2	Average Draft	Stack Temp.	Smoke Rating	Combustion-Absorption-Eff.
1.65	1.72	120	2625 cu. ft./gal.	1st Day	8.2	.02	475	3	80.5%
1.65	1.72	120	2677 cu. ft./gal.	16th Day	8.0	.021	495	3	79.6%*

**0.9% Drop in efficiency after operating 16 days at constant #3 smoke rating. Stack temperature increase 20° F.*

unit would show any decrease in efficiency that would result from the higher smoking index. CO_2 readings and stack temperature readings were taken on both units at the ten minute and nineteen minute interval of the twenty minute running periods. By the end of the third day of the tests, it was apparent that the increase of the smoke rating to the #5 point on Unit B was having a decided effect on the stack temperature. The increased smoking resulted in an immediate increase in stack temperature that was cumulative. The temperature rose sharply and constantly and by observing Graph #1, the effect of the increased smoking is evident. By the end of the eighth day, the stack temperature had risen over 75° due to the #5 smoke, while if it had been maintained at the original #3 smoke, the rise would have been but five degrees. Unit A operating at the constant #3 smoke had risen but eight degrees in stack temperature. CO_2 variations during these performances were negligible, and the main effect of changes in smoke ratings was seen to be upon stack temperature. The CO_2 changes throughout the tests were at an average of about seven-tenths of one percent and thus were no appreciable factor in any decline in efficiency when compared with stack temperature. Observing Chart #1, it can be seen that the shift in smoke rating from #3 to #5 increased the CO_2 by one half of a percent, while the stack temperature increase was 110°F. Upon shifting back to the #3 smoke at the end of the tests, the CO_2 declined from the average 8.5% to 7.9%, but the stack temperature jumped, as a result of the smoke decrease, an additional 12°F; no doubt caused by the additional excess air necessary to bring the smoke down from #5 to #3.

Chart #1 further shows the result of the operating period at the #5 smoke in terms of the decrease in efficiency. Combustion-absorption efficiency dropped from 81% to 76%, an extensive drop for the short period of operation when compared to what it would be for a full winter's duration. Compare this with Chart #2 for Unit A which operated as the "control unit" at a constant #3 smoke. In this case, the stack temperature increased but twenty degrees throughout the entire test period and the CO_2 varied an average of two-tenths of a percent. The total decrease in combustion-absorption efficiency for this unit was but nine-tenths of one percent. Had this unit operated at a lower smoke rating than #3, it would apparently have shown even a lesser degree of loss in efficiency.

The importance of the smoke reading now becomes obvious and its rating assumes a startling importance. CO_2 readings should be checked against smoke readings with the #3 smoke rating in mind. As any increase in smoke rating above #3 to achieve a higher CO_2 will result in a lower efficiency after a few days because of the sharp increase in stack temperature that results as the smoke rating advances. It can be noted from Charts #1 and #2 in comparing the 5% and 0.9% drops in efficiency for the #5 and #3 smoke ratings, respectively, that the drop in efficiency for the #5 rating is 82% more rapid than the #3 rating—an important and interesting observation!

It would seem from the above tests that there is no exact ratio of increase between the stack temperature and smoke rating, these varying with boiler design, burner design, draft conditions, etc., but it is certain that the stack losses are proportionate to the smoke ratings. The higher the smoke, the greater the losses, and the more cumulative become these losses when we add the factor of time. The longer the smoking continues above the #3 rating, the greater, *each day,* will be the losses. The constant incline of the #5 smoke curve in Graph #1 demonstrates this.

Effect of Different Types of Firebrick

The fact that an oil burner could be adjusted to a definite smoke rating and be held constantly at that rating gave opportunity to study the starting operation in terms of smoke ratings. One question that immediately arose was, "How long will a burner take to come down to the adjusted smoke rating," and from this appeared the corollary question, "What effect would heavy firebrick or light insulating firebrick have upon the length of time it would take to come down to the adjusted running smoke rating?" In this case the adjusted running smoke rating was #3 on the Bacharach-Shell Scale.

Graphs #2 and #3 clearly show the effect of refractory materials on the initial or starting smoke. The nozzle size 1.65 gives a comparatively hot fire and this size was selected so that the disparity in obtaining a balanced heat level condition in the chamber between the two types of brick would not be so great. With the two burners at approximately the same gph rate, the following contrasts were noted.

In the case of the heavy firebrick chamber, the starting smoke reached a level 25% higher than that of the burner firing into the soft insulating firebrick chamber. The respective top starting smoke ratings for heavy and light firebrick chambers were #8 and #6 respectively. Both burners were adjusted for the same CO_2's, but the variations ran as much as one percent during the starting cycle. The unit with the light firebrick coming to balanced smoke rating, CO_2, and stack temperature first.

In analyzing the Graphs #2 and #3, we can see that besides the difference in the higher smoke rating resulting on the starting cycle with the chamber of heavy brick, there is a considerable difference in the amount of time it takes to get down to the #3 running smoke rating. Readings on both units were taken every 30 seconds. It took 42 seconds for the unit with the soft brick chamber to get down to the #5 smoke. It took 240 seconds or 4 minutes for the unit equipped with heavy brick to reach the same #5 rating. This is six times as long as with soft brick.

To drop from the #5 to the #3 running smoke, the soft brick chambered unit consumed 204 seconds. The heavy brick unit required 300 seconds, exactly 5 minutes or about 30% more time.

Taking the overall starting smoke characteristics of both units, we find that the soft brick chambered unit required a total of 4 minutes and 6 seconds to come down to the running #3 smoke for which it was adjusted. From this we can conclude that it took but that time for it to reach a balanced combustion condition with a fairly stable running CO_2 reading. This was not the case with the unit equipped with a heavy brick firebox. To come down to the same

running #3 smoke, this unit took 9 minutes or over twice as long as the other unit.

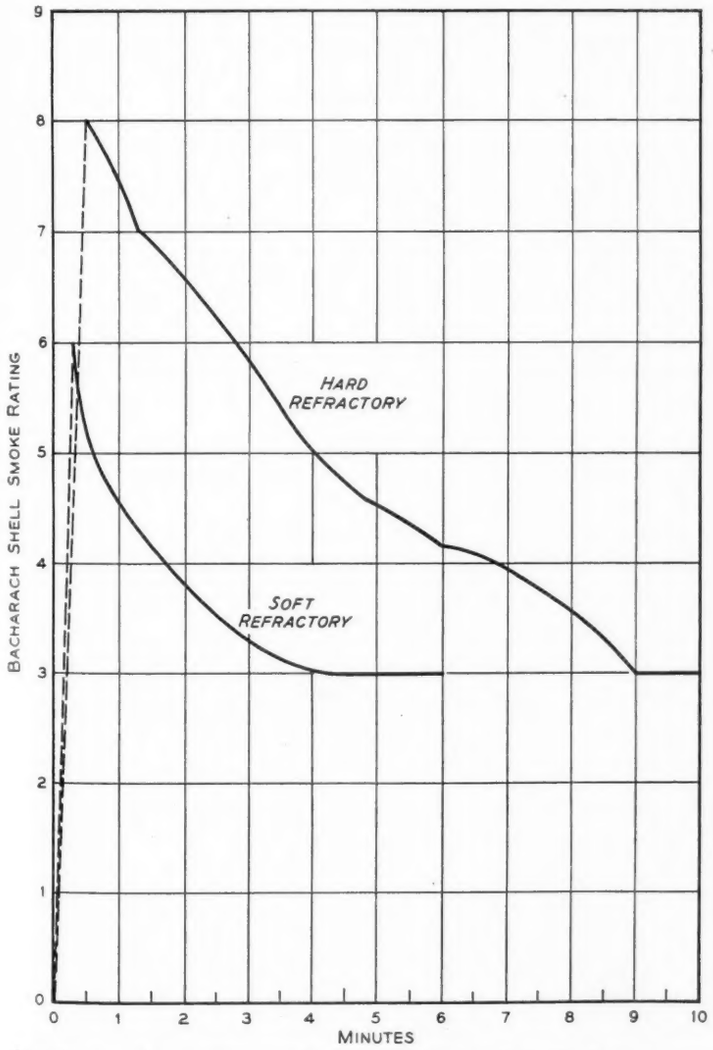
From the graphs, it is fairly obvious that the material of which the firebox is made, that is, heavy, or insulating firebrick, will directly affect the starting smoking conditions and seriously increase the amount of time required for a unit to achieve a balanced rate of combustion. However, in all fairness, there is no absolute evidence to support the obvious conclusion that the firebrick was responsible for the difference in the initial top smoke ratings that were reached (#8 and #6). This could have well been caused by an improper ratio of oil and air being delivered by the burners while the motors were coming up to speed. But it is certain that the amount of time it took for the smoke to come down to the #3 point was a definite result of the type of brick used and that the light insulating brick chamber achieved the balanced smoking combustion condition in less than one half the time required for the heavy brick chamber to do the same thing. This contrast would sharpen and the difference in time become greater as the nozzle size decreased. It should be noted at this point that both these chambers were of the same design and slightly oversized in order to accentuate the amount of time that would be required for them to reach a balanced temperature condition.

Effect of Pressure Cutoff Valves

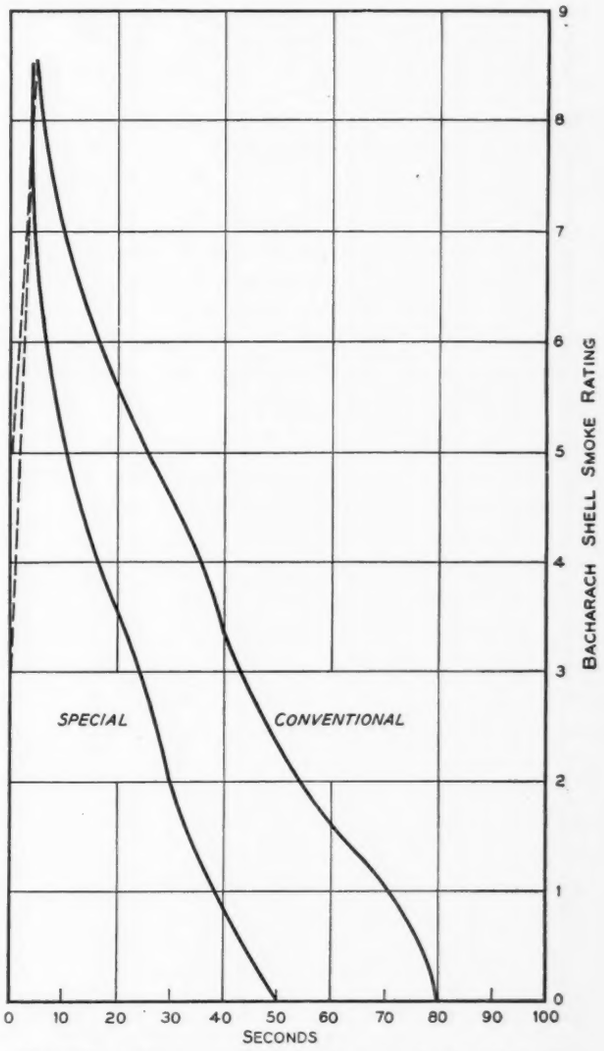
Just as the starting smoke curve, which was a function of the combustion conditions, was of interest in this study so was the closing smoke curve. The "closing smoke" as here used, means the smoke that develops just as the burner cuts off. This smoke is important not only in reference to how high may be its rating, but also as to how long it continues. This latter point could be measured by timing the interval it would take to come down to the zero rating. As can be readily seen, this is a function of the rapidity of the cutoff of the oil pressure as the burner shuts down. Thus a comparison could be drawn between two burners, one equipped with the standard pump with the ordinary built-in cutoff valve and the other equipped with a special cutoff valve expressedly designed to achieve a quick cutoff. The faster the cutoff, the shorter will be the duration of any post shut-off fire, and the less will be the smoke rating and duration of that smoke.

Graphs #4 and #5 show the comparison between the two conditions, both in

(*Continued on page 92*)



Starting smoke curves, *combining graphs 2 and 3. Both units in the test were adjusted to operate at No. 3 Bacharach-Shell smoke rating. One unit employed a combustion chamber made of soft firebrick, the other unit used a firebox constructed of hard firebrick.*



Cut-off smoke curves, *combining graphs 4 and 5. One unit, adjusted to run at No. 5 smoke rating used a conventional pressure cut-off valve, the other unit, set to No. 3 running smoke rating, employed a special pressure cut-off valve.*

Unit Heater Fuel Economy

Engineering Details All-Important with Forced Hot Water

by

J. W. Schulz

"YOU'D THINK SOME of these characters putting in unit heaters didn't *like* them," complained the field engineer of a unit heater manufacturer.

The factory engineer had gone to see a heating contractor because the contractor had just succeeded in selling a job which included three large unit heaters, an oil-fired boiler, one zone of standing radiation, and equipment for summer-winter hot water.

"He sold the job on a promise that it would run fuel bills half those of gas," the factory man complained, "and he knows the owner has other buildings of the same size which are gas heated, and so can easily compare costs of heating by gas and oil. But when this contractor gets down to planning the details of the system, he acts as though he's forgotten these things. The controls he figured on putting in would use about 35% more oil than necessary."

Diag. 1 shows the unit heater part of the system this dealer was planning. The three large unit heaters, in one room, should start and stop simultaneously. To provide unusual amounts of hot water without increasing the boiler size greatly, the dealer had ordered tank-type indirect water heater coils in the boiler. The zone which includes another circulator, about 1,000 sq. ft. of standing radiation, and a separate room thermostat control is not shown since it presented no problems.

Diags. 2, 3, and 4 show the controls which, to the disgust of the factory man, the dealer first planned to use. Diag. 2 shows how the three unit heater motors would be started and stopped simply by using a reverse-acting temperature control for each. Diag. 3 shows the simple burner wiring. As the dealer figures his unit heater sizes close, the factory man said, the boiler would have to be kept very hot, not an unusual condition for unit heaters in a forced-circulation hot water layout.

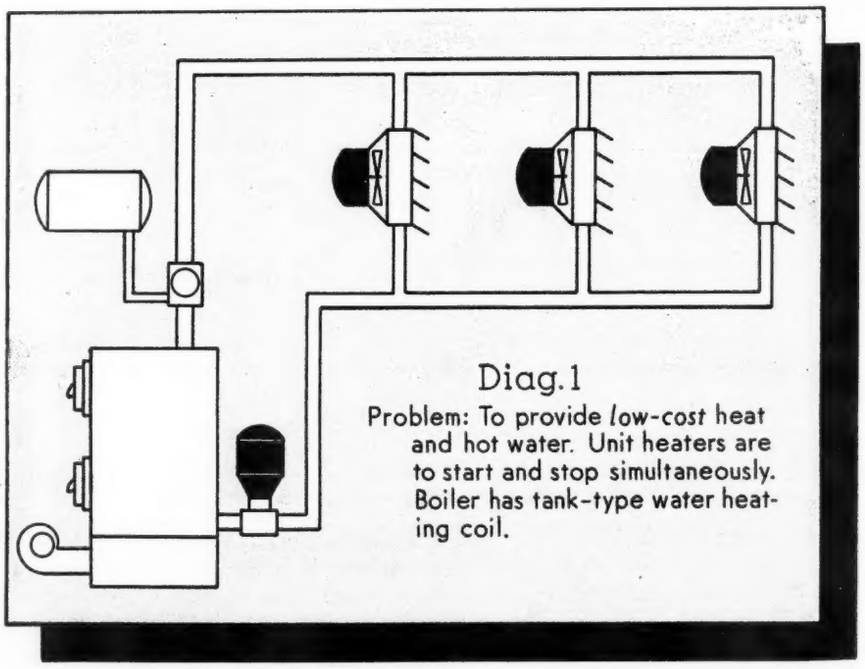
"He plans to start out with the low limit control in the thermostat low-voltage circuit of the burner panel set at 180°," said the factory man. "That's the control which according to his first layout would start and stop the burner regularly all year around. But I know my contractor. Before it's halfway through December, he would have that low limit control set up to about 225°, high as possible without boiling the water in the boiler. He always has to do that on his jobs to give enough heat during the cold months. Of course, since nobody will shift the control setting up and down for different months, it will stay at 225° all year. That, too, has happened before—on jobs where I've been called in later because of high oil bills.

"With measly insulation on the boiler, instead of a two-inch layer of magnesia block covering or something just as good, you can imagine the amount of oil that would be used a year just for keeping the big boiler at 225° all year."

Diag. 4 indicates that the hot water circulator of the unit heater zone would be started and stopped by a low-voltage relay and thermostat serving this zone. There would be an identical low-voltage relay and thermostat to control the circulator of the standing radiation zone not shown in the drawings.

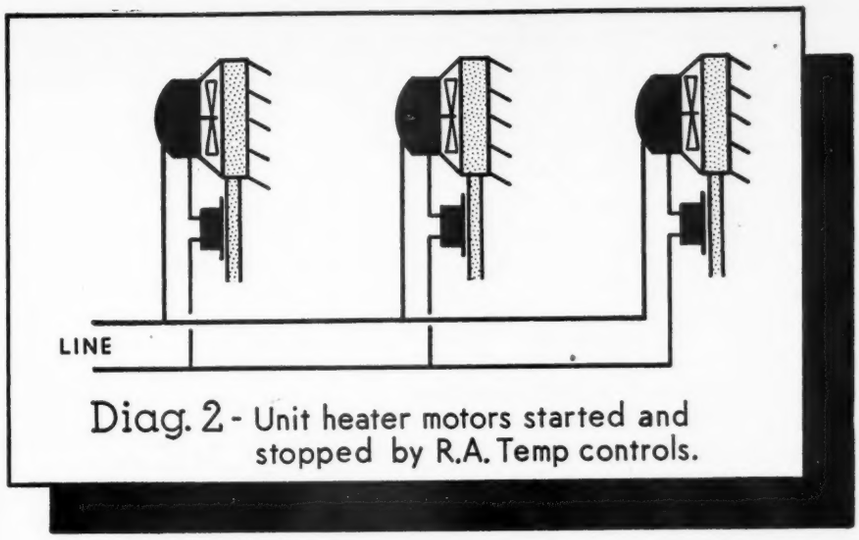
First, the factory man induced the contractor to use larger unit heaters than had been ordered for the job. Contractors often, according to the factory's experience, first figure the unit heater sizes on a basis of steam heating, then shift to hot water but do not increase the unit heater sizes sufficiently to compensate for the shift.

Second, approving the use of a two-pipe forced-circulation hot water layout, the factory man pointed out that the size and length of the supply and return lines were too great to skip pipe insulation. It was decided that highly effective pipe insulation would be used. There's been much grief with one-pipe forced hot water layouts made by contractors not sufficiently experienced with unit heaters, the factory engineer confided. A contractor who gets only one or two unit heater jobs a year usually is the one who tries a one-pipe system without asking the unit heater manufacturer anything about his layout. Poorly-planned systems which do not speed loads of hot water through each unit heater give trouble, then the factory hears of them

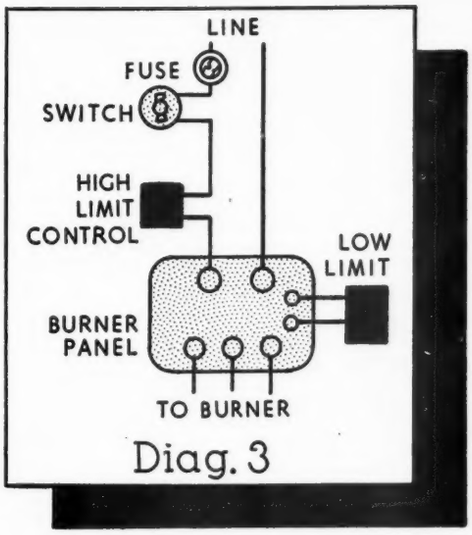


Diag. 1

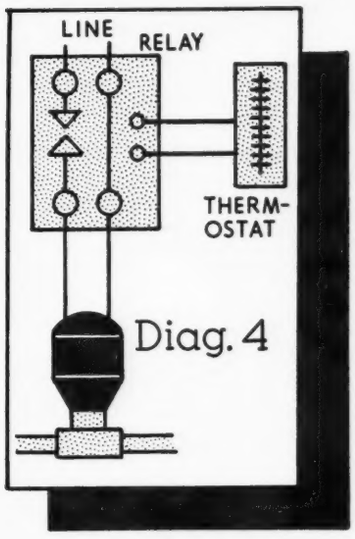
Problem: To provide *low-cost* heat and hot water. Unit heaters are to start and stop simultaneously. Boiler has tank-type water heating coil.



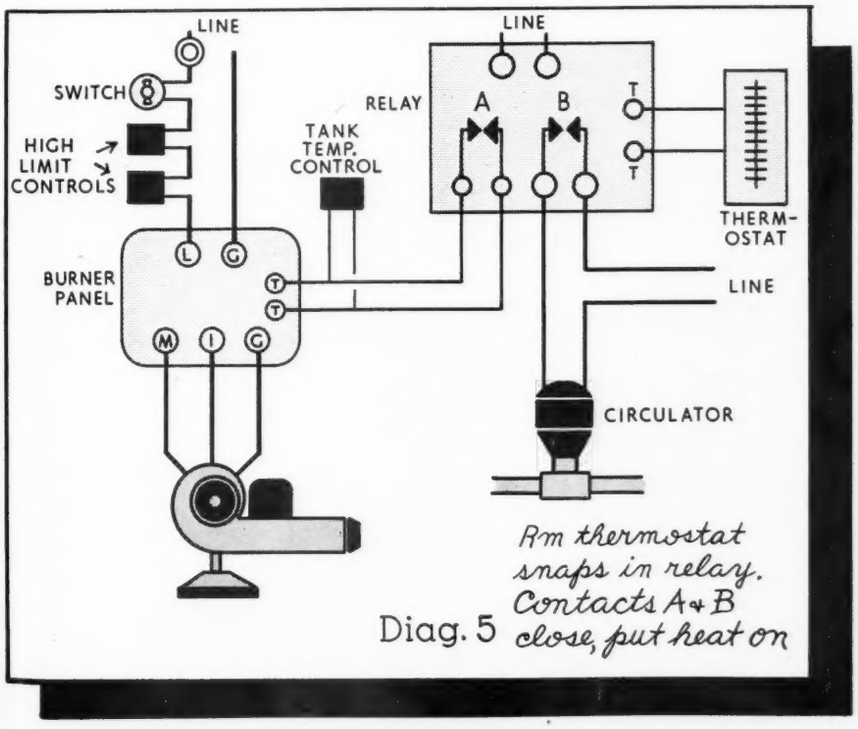
Diag. 2 - Unit heater motors started and stopped by R.A. Temp controls.



Diag. 3



Diag. 4



Diag. 5

for the first time. The contractor does not make the same mistake over again, but another contractor in the same town makes it within six months.

Along with seeing to it that the large, long mains would be well insulated, the factory man covered the topic of installing highly effective boiler insulating material.

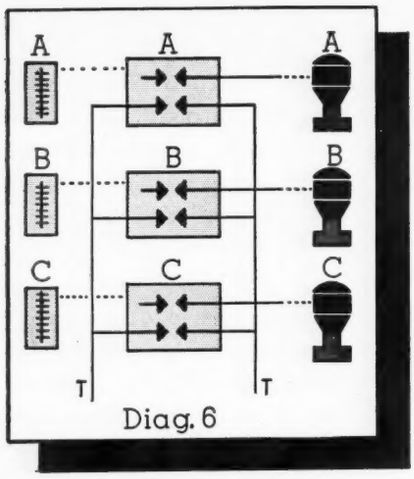
The third item related to fuel economy for this system had to do with the controls.

As a hot water storage tank would be used, in summer the big heating boiler would become cold, at times when the hot water tank was warm enough, through the use of a tank temperature control set at about 130° and located halfway up the side of the tank. Diag. 5 shows the tank temperature control wired to the thermostat circuit (labelled T-T) of the burner panel.

With the heating boiler cool because the burner had not run for hours when the tank was warm enough, some method for starting the burner for heating would be needed. Diag. 5 shows two sets of contacts in the relay connected to the low-voltage room thermostat. When the thermostat circuit (also labelled T-T) of this relay closes because heat is needed, the set of contacts labelled "A" starts the burner, while contacts "B" start the circulator of the unit heater zone. A reverse-acting boiler temperatur control set at about 160° could have been installed in the 110-volt live leg to the circulator motor, but was omitted here as not needed. Without such a control there still would be ample hot water at all times from the large hot water tank, it was felt. The disadvantage of having the circulator operate while the burner raised the temperature of a cool boiler was not considered great enough to warrant installing the extra control.

The unit heater wiring actually used on this installation is not shown in Diag. 5 because it is identical to the wiring shown in Diag. 2. When the unit heater return lines become hot enough because the burner and circulator have been started by contacts "A" and "B" in Diag. 5, the unit heater motors simply are started by reverse-acting controls located at the unit heaters in Diag. 2.

To make certain of enough heat from



Diag. 6

the unit heaters for coldest weather, the factory man recommended setting the high limit controls in Diag. 5 at 220° and 225°. The second control, in series with the first, is installed merely to play safe. In case the first control has trouble which causes it to fail to stop the burner, the second control will work.

Two circuits were used finally for the standing radiation load in this building, giving all told the three-zone system shown schematically in Diag. 6. When the circuit of room thermostat "A" at the left closes, relay "A" snaps in. The upper set of contacts in this relay starts circulator "A" of this zone, while the lower set of contacts, wired to "T-T" which represents at the bottom of the diagram the thermostat circuit of the burner panel, starts the burner. The action for zones "B" and "C" is similar. Each thermostat, on closing its circuit, snaps in the relay for the particular zone. One set of contacts in the relay starts the proper circulator, while the other set starts the burner. Wired across "T-T," so as to be able to start the burner also, is the control on the hot water storage tank. When this control closes circuit "T-T," the burner alone starts.

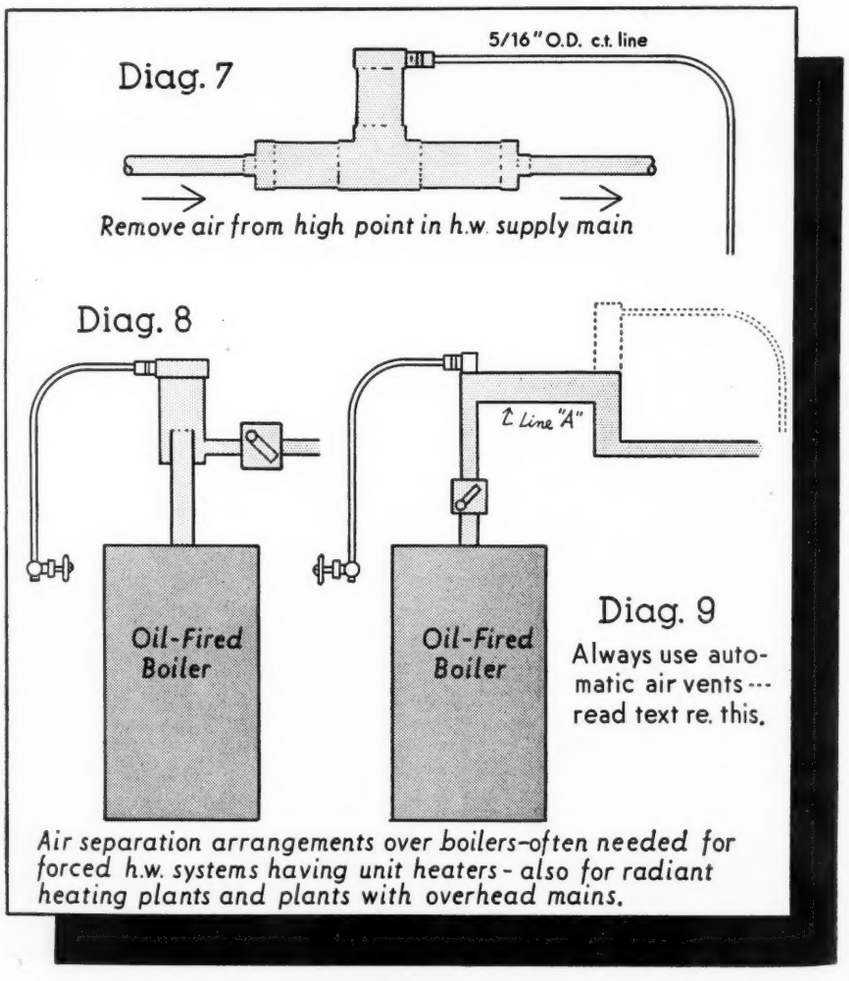
Wired as Diag. 5 indicates and with the lower-set of the high limit controls adjusted for 220°, the burner can provide a boiler temperature as high as 220° when this is needed for water heating or heating. The great advantage of this wiring arrangement, however, lies in the fact that the boiler temperature is high only when either heat or hot water are needed. The burner remains idle and the boiler becomes cool at times when (a) the hot water tank is sufficiently heated, and (b) none of the zones need building heat.

Diag. 7 shows an air-trap and air-removal arrangement. The "bulge" or enlarged horizontal section of this is two to three times the diameter of the hot water supply main. In the center is a tee facing upwards into a pipe section used to collect and remove the air. Slowing down the water as it travels through the large horizontal section of this device invites air bubbles and entrained air to separate out from the water and drift upwards. The vertical pipe at the upper port of the tee provides volume for insuring separation of air and water and for storage of the air.

A manually operated air release valve is used by some dealers at the lower end of the 5/16" O.D. copper tube line shown in the drawing, and this line is run down to a level convenient for the occupants of the building. The result of using this arrangement works out to be, according to some dealers who have tried it, a series of telephone calls about this or that unit heater not working properly. The building occupants are told, in each instance, to go about the building finding and using the manually operated valves which vent the air pockets. To avoid such trouble use automatic air vent devices at the tops of the air pocketing devices.

The Diag. 7 arrangement or its equivalent is often needed in unit heater lines of large factories, garages, hangars, etc. because the distances between the supports of the lines is necessarily great, and consequently there is considerable droop to the lines which results in high spots which need air pockets of this type. One way to play safe in planning the piping where piping droop cannot be avoided is to lay out the piping to have considerable slope; provide more slope than there will be pipe droop between supports. Select a high spot for each run of the piping, run the pipe downhill very definitely at each side of the slope, and place an air-ridding device similar to the one in Diag. 7 at the high spot you select in each line. This procedure avoids the heartaches and expense which frequently have come in the past of instructing the pipe fitters to install the lines "level and without

(*Continued on page 60*)



Air separation arrangements over boilers—often needed for forced h.w. systems having unit heaters - also for radiant heating plants and plants with overhead mains.

HERE IS OPPORTUNITY

...AND HERE ARE THE *Profitable* FACTS

Reach out into the "Big" burner field for the larger, more profitable installations. In hotels, banks, schools, apartments, libraries, churchs... wherever rated capacities from 6 to 30 gallons an hour are required you can now install a Silent Glow.

Five big models of the famous Silent Glow pressure atomizing burners to meet most requirements are now available in limited quantities for immediate delivery. Easy installation will appeal to you... quiet operation will appeal to your prospect. Write for specification sheets... they will help you turn today's opportunity into profit. Only SILENT GLOW has...

FLEX-FUSE DRIVE... reduces the strain on the motor when the burner starts. Automatically snaps if the motor is overloaded, saving major repair bills.

TIME SAVER TOP... the one piece top is easily removed with a screw driver exposing all working parts and permitting easy cleaning of the fan.

PROGRESSIVE ROTATION... spirals the flame increasing the distance which it travels. Greater absorption leaves less heat to go up the chimney.

REMEMBER

The Silent Glow Oil Burner Corporation, Hartford 6, Conn.

fueloil & oil heat

high spots" on installations where following these instructions is impossible.

Diags. 8 and 9 (page 56) show air pocketing arrangements for use over the boilers of unit heater installations. In Diag. 8 a large line comes up from the boiler vertically; this line is larger than the main of the particular zone. Air from the boiler can travel freely to the pocket, even with the circulation control valve of the particular zone closed because the circulator of the zone is idle. In Diag. 9, a horizontal pipe of two to three times the size of the main is used at a level above the main; this is marked line "A." Only this line need be provided for separation and storage of the trapped air if the line can be made several feet long in the particular equipment room. If of necessity line "A" can be made only one foot long, use a tee at its output end and provide the vertical air dome shown by the dotted lines.

Compared to systems made up mainly of cast-iron radiation, unit heater systems are especially susceptible to air-binding trouble. A small amount of air in cast-iron radiators does little harm. It does not stop the circulation and does not reduce greatly the heat-output for the affected areas. The trouble given by air in unit heater systems can be far greater because a small amount of air trapped in such a heater can stop the circulation or reduce greatly the output of the heater. Also, the nature of the piping of unit heater installations permits a small amount of air, when trapped in an overhead main, to stop the circulation. The piping droop problem described earlier also is severe in the usual layouts of unit heaters, but not in layouts which include radiators.

For similar reasons related to small amounts of air stopping hot water circulation or reducing heat output greatly, the air separation problems must be handled properly in radiant heating plants and in all types of hot water systems which have overhead mains. If you have hot water systems in which gurgling sounds are heard in the boiler rooms when the circulators operate, use the ideas of Diags. 7, 8, and 9 to end the trouble if it must be ended. By all means equip your new systems of similar design with air elimination devices of one type or another.

To cure the gurgling trouble in an existing system in which air continually travels with the water but does not stop circulation entirely in any circuit, only one highly effective air separation and elimination device may be needed in the boiler room. That is, air which continuously circulates can be separated out at one point in the boiler room, perhaps at the outlet of the circulator or boiler, and the use of one good separator device will rid all the water in the system of air and permit easy removal of the air again if some enters as a result of draining the system.

Helps Compete with Gas

In areas having gas for heating at costs too close to oilheating costs for the comfort of oilheating enthusiasts, the way to sell oil-fired plants is to make certain they give the tops in efficiency. With unit heaters, this means giving special attention to the control, piping, capacity, and heat insulation features which, when used, reduce oilheating costs as much as 35%. Here's what that 35% reduction in oilheating costs means. Where $100 worth of gas heat ordinarly means $75 in oil bills, the 35% savings cuts the oil bill to $48.75 making oilheat cost less than 50% of gas heat instead of 75%. It is still good in many cities to be able to say that oilheat costs half the price of gas heat. It is still possible, when dealers capable of higher engineering buckle down to the time-taking task of engineering every one of their installations for peak efficiency.

Changes For Your January Issue

IN SPITE OF extreme care and proof reading, mistakes do come to light in the January Annual Oilheating Analysis. If you, like so many others, file your copies for use through the year please make the corrections in your copy.

In Table 5 at the bottom of page 70, average minimum factory price last year should be $101, off 5.6% from 1947, instead of the $81 price shown. Please also make this correction in the text about the middle of the outside column above the table.

At the top of page 77, the fourth item in the table "Characteristics of 1948 Fueloil Distribution," shows average sales per dealer in thousands of gallons. The first line in this classification should be labeled "Distillate" instead of No. 1 and Kerosene; the second line should be "No. 1 and Kerosene" instead of Residual, and the last line should be labeled "Residual" instead of distillate. The figures are correct. Only the designations have been mixed. Reading down in this classification the designations should be Distillate, Kerosene and Residual. The figures remain as shown.

◈

T. G. Leonard, formerly in the sales and advertising department, has been promoted to the position of assistant sales manager, Coroaire Heater Corp., Cleveland 15, Ohio.

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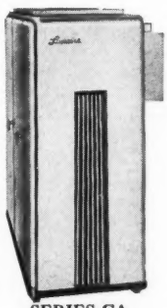
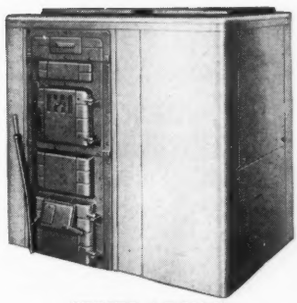
Luxaire THE STREAMLINED— LINE FOR '49

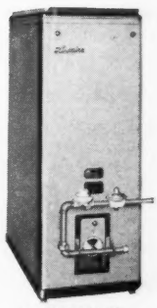


SERIES CA
Gas-Fired, Cast Iron, Air Conditioning Unit.

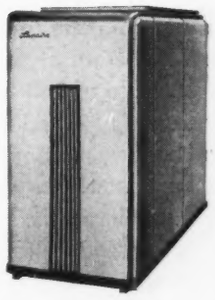
SERIES V
Vaporizing Oil-Fired, Steel, Air Conditioning Unit. Also available in Utility Unit and Gravity Furnace.



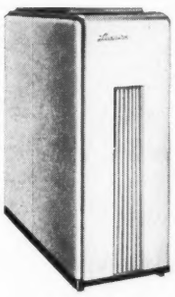
SERIES AC-700-F
Coal Fired, Steel, Air Conditioning Unit.



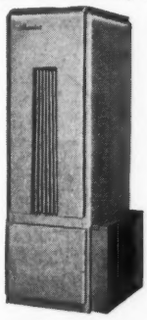
SERIES G
Gas-Fired, Steel, Gravity Furnace.



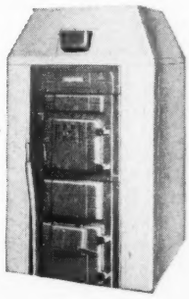
SERIES O
Gun, Oil-Fired, Steel, Air Conditioning Unit.



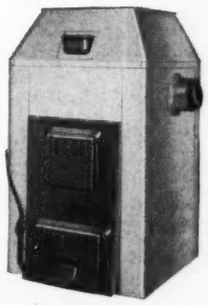
SERIES A
Gas-Fired, Steel, Air Conditioning Unit.



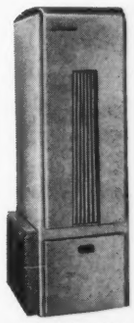
SERIES H
Gas-Fired Utility, Steel, Air Conditioning Unit.



SERIES 700
Coal-Fired, Steel Gravity Furnace.



SERIES C
Coal-Fired, Cast Iron, Gravity Furnace.



SERIES CH
Gas-Fired, Cast Iron, Utility Air Conditioning Unit.

A COMPLETE restyling of the entire Luxaire line, with die-formed, gracefully rounded, streamlined cabinets—cabinets that will blend with and fit into any modern decorating scheme—is Luxaire's New line for '49.

Both design and construction have been streamlined. Ease and speed in assembly of the precision fitting, die-formed parts is still an outstanding Luxaire feature. A substantially heavier gauge of steel than is generally used in cabinet construction, provides more substantial, more rigid cabinets. Luxaire leads both in practicality and beauty.

Whether it's for coal, gas or oil—for a gravity or forced air installation—Steel or Cast iron heating elements—there's a New streamlined Luxaire Unit that will fit any heating job.

For a streamlined job in a streamlined plan it is much easier job to *sell Luxaire* than compete against it.

THE C·A·OLSEN MANUFACTURING COMPANY

Luxaire HEATING & AIR CONDITIONING UNITS

ELYRIA 12, OHIO

fuel oil heat

OHI Show Space 80% Sold; Committee on Convention

MORE THAN FOUR-FIFTHS of available exhibit space at the Oil Heat Institute's National Oil Heat Exposition at Boston, May 16-20, had been sold by the middle of January, according to C. F. Curtin, exposition manager. "More than 100 exhibitors have taken from one to nine booth spaces each," Mr. Curtin reports. Mechanics Hall, Boston, where the show will take place, has a floor area of 27,000 square feet. This is equal to the largest show ever put on by the Institute."

While headquarters is closing out the remaining space, the Exposition Committee has turned its attention to a convention program to match the king-size show. A feature planned for this year is "Architects' and Engineers' Day" on Friday, May 20. All convention sessions and business meetings will be held at the Hotel Statler.

A meeting of the Exposition Committee, consisting of R. S. Bohn, chairman, H. M. Brundage, L. A. Casler, J. A. Collins, H. W. Loveren, W. A. Matheson, J. W. Owens and Frank P. Scully, was held at New York, January 10. A tentative program was discussed, calling for directors' distribution and accessory division and other meetings and discussion sessions.

The tentative calendar:

MONDAY, MAY 16
INSTITUTE DAY
10:00 A.M. Retiring OHI Board Meeting
1:30 P.M. Annual Meeting—Accessory Division
1:30 P.M. Annual Meeting—Distribution Division
4:30 P.M. Show Committee Meeting—Mechanics Hall
7:00 P.M. Exposition Opens
10:30 P.M. Exposition Closes

TUESDAY, MAY 17
LADIES' DAY
10:00 A.M. Annual Meeting—OHI of America
12:30 P.M. New OHI Board Luncheon Meeting
1:00 P.M. Exposition Opens
2.30 P.M. Ladies' Reception
10:30 P.M. Exposition Closes

WEDNESDAY, MAY 18
INDUSTRY DAY
9:30 A.M. Industry Session
10:00 A.M. Ladies' Entertainment to 4:00 P.M.
1:00 P.M. Exposition Opens
10:30 P.M. Exposition Closes

THURSDAY, MAY 19
DEALER DAY
9:30 A.M. Dealer Day Session
1:00 P.M. Exposition Opens
5:00 P.M. Exposition Closes
6:30 P.M. General Cocktail Hour —Statler
7:30 P.M. Annual Banquet and Entertainment—Statler

FRIDAY, MAY 20
ARCHITECTS' AND ENGINEERING DAY
10:00 A.M. Engineering Session
1:00 P.M. Exposition Opens
5:00 P.M. Exposition Final Closing

List of Exhibitors*
NATIONAL OIL HEAT EXPOSITION
Mechanics' Hall—Boston
May 16-20, 1949

Exhibitors	*Space No.*
Aldrich Co.	518
American Artisan	375
American Radiator & Std. Sanitary Corp.	624
Applied Mechanics Co.	351
Auto Heat Corp.	319
Automatic Devices Co.	591
Bacharach Industrial Instrument Co.	656
Bell & Gossett Co.	610
Bethlehem Foundry & Machine Co.	688
Brown Electric Co.	359
Century Engineering Corp.	580
Cole-Sewell Engineering Co.	550
Commercial Filters Co.	760
Delavan Engineering Co.	765-767
Delco Appliance Division	458
Delco Products Division	758
Dielectric Products Co., Inc.	763
Dole Valve Co.	418
Domestic Engineering	465-467
Dongan Electric Mfg. Co.	764
Duo-Therm Division	218
Eckhart Mfg. Co.	560
Eddington Metal Specialty Co.	565-567
Electrol Burner Mfg. Co., Inc.	113
Fairbanks, Morse & Co.	367
Federal Boiler Co., Inc.	757-759
Field Control Division	377
Fitzgibbons Boiler Co., Inc.	564-566
Fluid Heat Division	476
Fuel Oil News	788
Fueloil & Oil Heat	430
General Electric Co., Air Conditioning Dept.	571
General Electric Co., Apparatus Dept.	659-661
General Filters, Inc.	365
General Fittings Co.	513
General Oil Burner Corp.	487-489
General Oil Heating Corp.	554-556
Gulf Oil Corp.	324
Hajoca Corp.	691
Harvey-Whipple, Inc.	219
Heil Co., The	464-66-68-70
Herco Oil Burner Corp.	530
Herrick Co.	406
Independent Oil Burner Corp.	678-680
Jefferson Electric Co.	369
Johnson Co., S. T.	795-97-99
Kent Co., Inc., The	371
Kresno-Stamm Mfg. Co. (America) Inc.	654
McDonnell & Miller, Inc.	655-657
May Oil Burner Div.	664-666
Mercoid Corp., The	658-660
Minneapolis-Honeywell Regulator Co.	781-3-5-7-9-791
Monarch Mfg. Works, Inc.	355
Morse-Smith-Morse, Inc.	756
Mt. Hawley Mfg. Co.	768
Mueller Furnace Co., L. J.	477
Newark Transformer Co.	400
Norge Heat Division	694
Oil Eqpt. Laboratories, Inc.	593
Oil Eqpt. Mfg. Corp.	793
Penn Electric Switch Co.	588-590
Perfex Corp.	581
Preferred Utilities Mfg. Corp.	479-483
Quaker Mfg. Co.	323
Quiet Automatic Burner Corp.	361
Quiet-Heet Mfg. Corp.	766
Radiant Utilities Corp.	609
Rajah Co., The	761
Reif-Rexoil, Inc.	754
Rochester Mfg. Co., Inc.	586
Scully Signal Co.	331
Shell Oil Co.	606
Sid Harvey, Inc.	753-755
Silent Glow Oil Burner Corp.	210
Smith Co., Inc., H. B.	618
S.O.S. Products Co., Inc.	630
Sparkler Mfg. Co.	769
Standard Heater & Oil Eqpt. Co.	224
Stefco Steel Co.	330
Sundstrand Engineering Co.	621
Sundstrand Hydraulic Division	457
Super Electric Products Corp.	771
Taco Heaters, Inc.	523
Thatcher Furnace Co.	687
Thrush & Co., H. A.	119
Timken Silent Automatic Division	313-410
Toridheet Division	559
Torrington Mfg. Co., The	424
Tuthill Pump Co.	786
U. S. Machine Corp.	577
Viking Mfg. Corp., The	519
Waltham Oil Burner Co.	406
Waterfilm Boilers, Inc.	587-589
Watts Regulator Co.	357
Weatherall Engineers, Inc.	318
Webster Electric Co.	667
White-Rodgers Electric Co.	459-461
Williams Oil-O-Matic Division	695-794
York-Shipley, Inc.	354-6-8-60-2-4-6-8-70

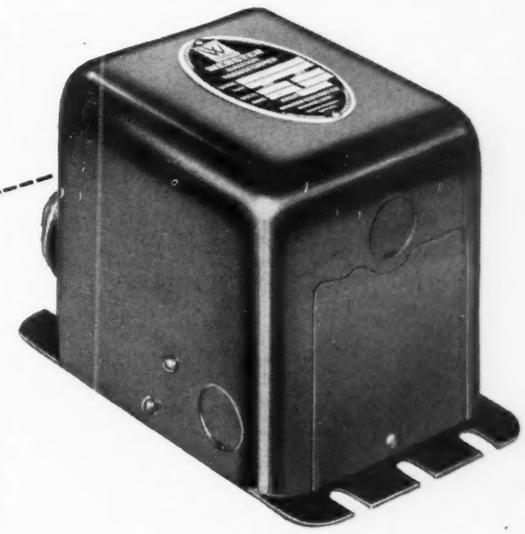
*As of January 7, 1949.

ALL THREE assure dependability

1. WEBSTER ELECTRIC Fuel Units

Webster Electric Fuel Units are an asset to new oil-burning equipment as they insure top performance and a minimum of repair. They are quiet-running . . . give constant pressure . . . have quick cut-off . . . simple, thorough air bleeding . . . no oil spillage when servicing strainer.

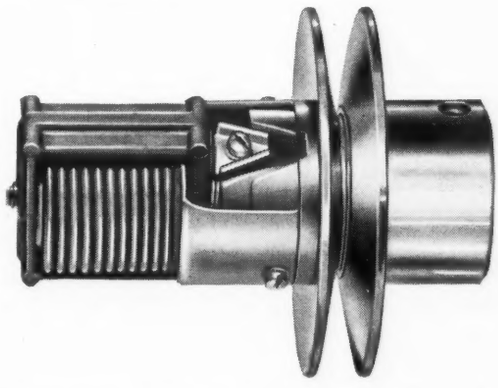
Webster Electric maintains service stations on a nation-wide basis to give prompt servicing when needed. In Canada, Webster Electric Fuel Units are made by Canadian Acme Screw & Gear Ltd., Toronto.



2. WEBSTER ELECTRIC Transformers

Webster Electric Transformers give positive ignition under all conditions . . . long, dependable, trouble-free life. Their well-balanced design is an outgrowth of thirty years' experience. They are adaptable for simple and convenient replacement.

Their outstanding features are: easy interchangeability . . . extra-sized junction boxes providing easy connections . . . separate mounting plates for replacement and secondary coil protected by mica insulation.



3. WEBSTER ELECTRIC Thermodrive

Thermodrive offers a perfected improvement for forced warm air heating systems. It automatically and continuously coordinates fan speed with bonnet temperatures for greater heating efficiency. Write for descriptive booklet.

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"Where Quality is a Responsibility and Fair Dealing an Obligation"

Ninth Annual Heating Show Finds Optimism, With Caution

THE THIRTY-ODD thousand heating dealers and their employees who thronged the Ninth International Heating and Ventilating Exposition at Chicago during the week of January 24 were almost unanimous in their praise of the spectacle and its interest to them . . . but for the most part they kept their hands in their pockets.

The exhibitors didn't size up this attitude as one of pessimism over the year's outlook for business—not at all. Rather they saw the dealers unsure of what to do with their new found freedom from shortages and restraints. As one expressed it, they're like a football carrier who suddenly finds himself in the clear and is so surprised that he stands and looks around instead of dashing for the goal. Then some dealers expect lower prices later.

The total registrations were expected to reach 35,000, compared with 36,446 at the New York show the year before, or about the same. That doesn't mean 35,000 dealers of course, because each time a visitor attended the show he was required to register and some individuals made several visits. Then the nearby dealers often had several of their employees in for a look around. Thus probably eight or ten thousand individual organizations were represented. Their collective buying power is impressive, and all of the exhibitors consulted said they had a good play at their booths.

Oilheating did not dominate the show to the extent that it has some of the earlier ones, probably because a lot of the burner manufacturers decided against supporting two shows in one year, and chose the O.H.I. exposition at Boston in May.

Oilfired heating equipment was shown in 44 booths but only 12 of the manufacturers in those booths would be considered typical burner producers . . . this dozen included only three or four of the large ones.

The other 32 companies showing oilheating would be classified by background and prinicipal interest, in this order: 23 furnace manufacturers, four stoker manufacturers, three boiler manufacturers, one gas equipment mfr. and one commercial unit heater mfr. Eight showed equipment for all three fuels.

Visitors pointed out that there wasn't a lot that was new at the show—that is, new in the sense of radical change. One couldn't escape the impression however that the general character of most of the equipment displayed was decidedly above that of a few years ago.

Some of the unusual items seen in a stroll around would include: A vaporizing burner with electric ignition and only one-stage fire, with the air starting ahead of the oil and continuing briefly after the oil stops . . . A blue-chip maker of pot-type equipment with a new full line of high pressure gun burners and units . . . A burner that handles either gas or oil, so oil can take over the load on coldest days, to bless the gas company . . . A heat pump display with the slogan, "Out of This Earth" . . . A low pressure "fuel unit" that can be used to convert high pressure burners to low . . . A low priced furnace-burner unit with built-in summer-winter hot water . . . Two companies showing units that can be changed from gas to oil "by removing four bolts" and substituting the new firing piece . . . Two burner manufacturers with dramatic presentations who got, respectively, 500 and 300 cards of dealer names for the field men to call on with "the deal" . . . The American Gas Assn. predicting that daily output of manufactured gas in 1951 will be 4 billion feet, against 3½ billion this year, and that natural gas' daily output will rise from 11.3 billion to 14.8 billion feet in the same two years.

ASHVE and Wholesalers Meet; Hear Work Reports, Forecasts

ABOUT 3000 members and friends attended sessions of the American Society of Heating and Ventilating Engineers on four days of the show week at Chicago, and a smaller number of manufacturers representatives and jobbers attended simultaneous sessions of the Second Annual Convention of the National Heating Wholesalers Association. Convention attendance was believed to have set a new record at the Chicago sessions, January 24 to 28.

Wholesalers heard predictions of a good year ahead for those who are prepared to push for business. Sessions were held on the first two days of show week.

ASHVE members were holding their 55th Annual Meeting with near record attendance at sessions during the first four days of the week. The program was well sprinkled with entertainment, inspection trips and affairs for the ladies. Convention sessions dealt largely with reports on research activity.

Papers Presented

Heating plants for floor-panel houses should be capable of supplying heat in substantially greater quantities than the calculated demand, it was revealed in a report on work conducted at Minneapolis by Prof. A. B. Algren of the Univ. of Minn., and Ben Ciscel of Minneapolis-Honeywell. Transient heat storage and losses require the additional plant capacity. Tests were run on a specially constructed, window-less house with a 2500 Btu/hr. heat loss.

The large difference between total heat stored in the panel and total heat supplied to the system indicated that panel storage accounted for only a part of the total heat-input, it was reported. It was recommended that adequate insulation be used between the panel and the rock fill as a means of improving temperature response of the panel.

Tests indicated that mean radiant temperature and air temperature were generally within a degree of each other, and maximum air temperature rise rates were about eight degrees per hour, and usually occurred about an hour after the heat input had been increased. Floor coverings or a smaller heat input would delay the air temperature rise.

Research at the Univ. of Ill., by Warren S. Harris and R. H. Weigel shows

Insure Your Years Ahead

with MONCRIEFS "YEARS AHEAD"

Heating Equipment!

FOR over 55 Years Moncrief Dealers have insured their "Years Ahead" with Moncrief's "Years Ahead" heating equipment.

Staying "Years Ahead," with the smartest, the most distinctive, eye-appealing line of heating units in Moncrief history again insures your "Years Ahead."

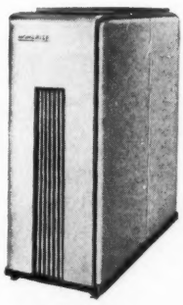
The "Aristocrats" in cabinet design are featured throughout the entire line. All models are beautifully finished in harmonious baked enamel colors that will fit into any decorative heating scheme.

All cabinets are beautiful, symmetrical units—are quick and easy to assemble—*they're die-formed.*

All cabinets are more substantial than most heating cabinets—they're made from a heavier gauge of steel.

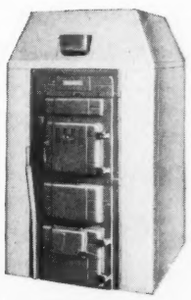
Wherever or whatever the demand may be—a coal—a gas or an oil job . . . a gravity or forced air job—there's a Moncrief with "Years Ahead" features that fits the demand.

SERIES AC-700-F
Coal-Fired, Steel,
Air Conditioning
Unit.

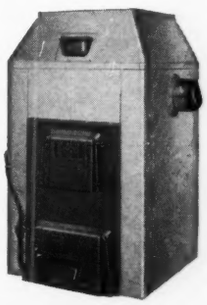


SERIES L
Gas-Fired, Steel, Air
Conditioning Unit.

SERIES U
Gas-Fired, Steel, Utility
Air Conditioning Unit.

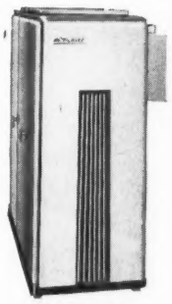


SERIES 700
Coal-Fired, Steel,
Gravity Furnace.

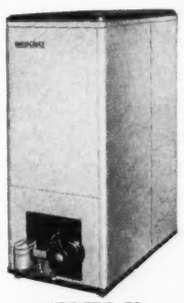


SERIES C
Coal-Fired, Cast Iron,
Gravity Furnace.

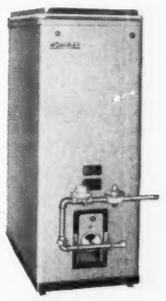
SERIES CU
Gas-Fired, Cast Iron, Utility
Air Conditioning Unit.



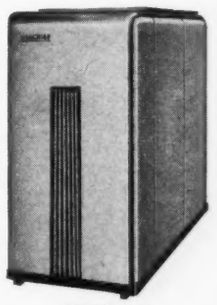
SERIES CL
Gas-Fired, Cast
Iron, Air Condition-
ing Unit.



SERIES V
Vaporizing, Oil-Fired, Steel
Air Conditioning Unit. Also
available in Utility Unit.
and Gravity Furnace.



SERIES W
Gas-Fired, Steel,
Gravity Furnace.



SERIES P
Gun, Oil-Fired, Steel,
Air Conditioning Unit.

THE HENRY FURNACE COMPANY

Medina, Ohio

HEATING AND AIR CONDITIONING UNITS — MONCRIEF SINCE 1895. — FURNACE PIPE AND FITTINGS

fueloil oil heat

baseboard radiators successful in maintaining even temperatures in a research home, even though weather fluctuates in a wide range. The baseboards keep floor temperatures near walls warmer than in the center of the room, instead of cooler when standing radiators are used. Tests were run in a prefabricated, basementless house.

Fuel consumption was not affected by setting of the adjustable differential on the thermostat, it was revealed, but water temperatures in the baseboard and fluctuations in air temperatures were affected by adjustment for a wider differential. Short burner and circulator cycles gave more even air temperatures.

Four chimneys; two of common brick, one of light weight materials and one double walled experimental chimney, were tested for efficiency and showed little variation. Cross section area did have some effect on efficiency but only so far as it affected friction and recirulation losses. Another paper indicated that lighter, cheaper masonry chimneys were equal to brick in performance.

Research on heat loss through glass indicated the need for further study on radiant energy exchange to the ground and atmosphere outside windows. The researchers reported that the U value of 1.13 for single glass is a good approximation, but the 0.45 value for double glazed windows is "from 25% to 40% too low for design wind velocities."

Alfred E. Stacey, Jr., director of application engineering, Carrier Corp., was announced as 1949 president of ASHVE. First vice-president is Lester T. Avery, Avery Eng. Co.; second vice-president, Lauren E. Seeley, Univ. of N. H.; treasurer, Earnest Szekely, Bayley Blower Co.

◈

Offer Printed Copies Of Fueloil Standards

PRINTED COPIES of Fueloils, Commercial Standard CS12-48, are available, according to the Commodity Standards Div., National Bureau of Standards. Mimeographed copies have been furnished since August 25, 1948 when establishment of the revision was announced.

This is the fifth revision of Commercial Standard for Domestic and Industrial Fueloils, originally established in 1928. Printed copies of the current revision, developed by Technical Committee E, ASTM, Committee D-2, contain a list of acceptors, brief history of the development of the standard and a roster of the Standing Committee.

Copies can be secured from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Price is 10¢ per copy.

◈

OHI Directors Study Trade Practice Code

A COMMITTEE with A. T. Atwill as chairman and the balance of the membership made up of Oil Heat Institute Distribution Division directors, has been appointed by President R. S. Bohn to investigate the Code of Fair Trade Practices proposed for New England, with a view to making recommendations to the Board. Besides the chairman the membership includes Lin Bowman, Portland, Ore.; J. A. Collins, Buffalo, N. Y.; Francis Gilbane, Pawtucket, R. I.; F. C. Haab, Philadelphia; Carl R. Jonswold, Chicago; Walter J. Scheorder,

REPEAT PROFITS

GENERAL FUEL OIL FILTERS WITH THE RED TOP FOR LARGE FURNACES OR BOILERS • HOT WATER HEATERS • SMALL FURNACES SPACE HEATERS

Model 1A-25. 4¾" High. 3½" Dia. Filter Unit Surface 31 Sq. In. ⅜" Pipe Openings.

Model 2A-700. 6¼" High. 4-5/16" Dia. Filter Unit Surface 72 Sq. In. ⅜" Pipe Openings.

Model 2A-300. 9-1/16" High. 5½" Dia. Filter Size 63 Cu. In. ⅜" Pipe Openings.

YEARLY DIVIDENDS

After making the original sale of a GENERAL FILTER, dealers make a dividend each year through the sale of replacement cartridges. The customer, of course, returns to the dealer who made the original installation —and installation is so simple that it can be made in less than two minutes. If you haven't already done so, investigate the profit possibilities of GENERAL FILTERS. See that each one of your customers has one.

WRITE FOR THE NAME OF YOUR NEAREST JOBBER

GENERAL FILTERS INCORPORATED
GENERAL FUEL OIL FILTER
12890 WESTWOOD AVE. DETROIT 23, MICHIGAN
CANADIAN FACTORY BRANCH: GENERAL FILTERS CANADA, LTD., 173 STRACHAN AVE., TORONTO 3, ONTARIO

"I SAVED OVER $800 by installing forced warm air heating"

MR. R. D. STIEHL CO-OWNER OF
H & S BOWLING ALLEYS IN
AU GRES, MICHIGAN

"I intended originally to install wet heat...

...but after receiving estimates on such systems I investigated warm air heating and asked the same contractor (who was the low bidder on the wet heat installation) to estimate the entire job for forced warm air heat and in so doing saved $800.

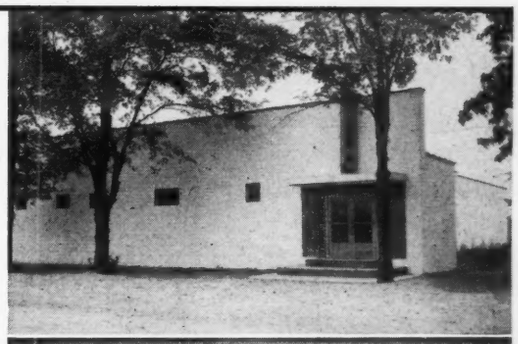
Actually our savings will run much more than that because . . . when we install a summer air conditioning system we will be able to use the ductwork of the heating plant and thus eliminate this feature for the air conditioner.

Air diffusers in the ceiling give an even heat throughout, and there are no heating units suspended from rafters or side walls to detract from the appearance of the interior decorations.

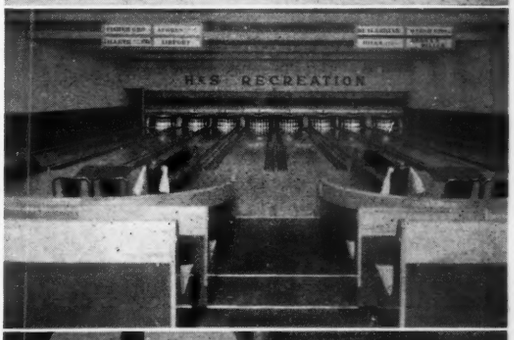
Mr. Edward Tarnosky of the Au Gres Plumbing and Heating Company, estimated both jobs and installed a Jackson & Church oil fired furnace, Model OL-48 with an output of 380,000 Btu's per hour.

My fuel consumption is low, and . . . the bowlers are comfortable because we have the added features of: 1.-frequent air changes, 2.-ample humidification, and 3.-filtered air. My partner, Mr. Roy Holland and I are very glad that we did not overlook the advantages of forced warm air heating." *

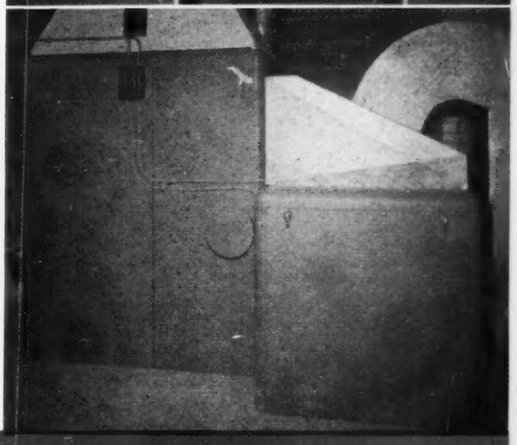
*Statement of Mr. R. D. Stiehl on file with Jackson & Church Company



New H & S Bowling Alley in Au Gres, Michigan



Interior view of H & S Bowling Alley (note improved appearance due to absence of suspended heating devices.)



Heating installation showing J & C PoweRated Model OL-48 with output of 380,000 Btu's per hour. Installed by Mr. Edward Tarnosky owner of the Au Gres Plumbing and Heating Company.

Memo: You too can save by installing forced warm air heat. See your nearest J & C dealer or write us at Saginaw.

J&C . . . AMERICA'S LARGEST AND MOST COMPLETE WARM AIR HEATING LINE

INDOOR COMFORT

A PRODUCT OF
JACKSON & CHURCH CO., SAGINAW, MICHIGAN
"WORK WELL DONE SINCE '81"

Milwaukee; and J. W. Warner, Washington, D. C.

OHI directors, meeting at New York, January 11, elected H. M. Brundage to take the place of G. R. Prout of General Electric on the board, and referred to the Constitutional Committee certain changes that will make possible the Technical Division to carry on research.

New members elected to the Institute were the Kent Co., Rome, N. Y.; Newark Transformer Co., Linden, N. J.; The Sparkler Co., Mundelein, Ill.; and Stefco Steel Co., Michigan City, Ind.

◈

Utility Asks To Stop Giving Oil In Emergencies

FREE OIL to utility customers in times of disruption of service is becoming burdensome, according to the Gas and Light Co., Columbus, Ga. The company has asked the Public Service Commission for permission to stop the practice, since it has become "a burdensome feature" of its service.

Utility representatives, appearing at a hearing in Atlanta, said the higher prices made the free oil service impossible to finance.

◈

Survey Shows 12% Canadian Homes Oilheated

ABOUT 388,000 Canadian homes use fueloil for heat, according to a survey by the Dominion Bureau of Statistics, Ottawa. This represents 12% of the total home heating market. Of the oilheated homes, 25,000 are in the Maritime Provinces; 184,000 in Quebec; 116,000 in Ontario; 25,000 in the Prairie Provinces, and 38,000 in British Columbia. Little more than 41% of these oilheated homes (160,000) have a central heating plant.

Of the users of oil for heating an estimated 96,000 have steam or hot water boilers; 64,000 have warm air furnaces; 72,000 use oil in cookstoves and ranges, and 154,000 in heating stoves.

Oilfired central heating plants are estimated to be divided in the following provinces: Maritime, 11,000; Quebec, 47,000; Ontario, 75,000; and British Columbia, 19,000. Oilfired stoves and ranges are distributed: 14,000 in the Maritime Provinces; 137,000 in Quebec; 41,000 in Ontario; 17,000 in the Prairie Provinces; and 19,000 in British Columbia. There also are 124,000 Canadian homes that use oil in supplementary heating equipment.

Residual and furnace oil consumption for heating in Canada reached 343,050,266 Imperial gallons in 1947, up from 205,270,008 in 1946. Lighter distillates in 1947 totaled 188,379,167 Imperial gallons for heating, up from 117,715,621 in 1946.

◈

NPC Outlines "Aims Of A National Oil Policy"

MEMBERS of the National Petroleum Council unanimously approved a statement covering "The Aims of a National Oil Policy" on January 13. This policy was drawn at the request of Secretary of Interior Krug, under whom the NPC was formed and operates.

In a statement of objectives the policy sets forth five objectives for the petrole-

The Bethlehem DYNATHERM

PROVIDES THE FEATURES YOUR CUSTOMERS WANT

★ **The Whirling Flame.** Extracts every bit of useful heat from every last drop of oil, assuring big savings on fuel bills!

★ **"Thermos Bottle" Insulation.** Radiation and heat loss are minimized throughout the non-heating season.

★ **Unit Engineering.** Design and construction as an integral unit results in far greater heating efficiency.

★ **Beautiful Cabinet.** Duotone baked enamel cabinet will blend perfectly with the surroundings.

A few exclusive Bethlehem Dynatherm territory Franchises are still available
Wire or write immediatey for full information.

Product of a Century-old Company

THE BETHLEHEM FOUNDRY & MACHINE COMPANY
BETHLEHEM PENNSYLVANIA

"No expense...in 20,000 miles...with FORD F-8 BIG JOB!"

Roadside Report

FORD Bonus Built TRUCKS

O. E. HELLING

PIPESTONE, MINNESOTA

"WE HAVE DRIVEN the FORD F-8 Big Job some 20,000 miles with no expense, except the regular servicing, such as changing oil, greasing, etc," reports Mr. O. E. Helling, Manager of the Hicks Oil Company. "This unit has traveled on gravel and blacktop in all parts of Minnesota, pulling a 5245-gallon gasoline tanker. Gasoline mileage has been 5.5 miles per gallon. We feel this is very good considering the load and road. We recommend the Ford F-8 Big Job to any operator who needs 'Big Power.'"

With Mr. Helling, as with thousands of other extra heavy duty truck users, the new Ford 145-horsepower Big Jobs are all the go! One reason why . . . engine power second to none in its class. Second reason . . . the luxury of the new Ford Million Dollar Cab. Third reason . . . Bonus Built construction, a feature of every one of over 139 Ford Truck models. Bonus Built is the superstrong construction that contributes to long truck life. Life insurance experts prove Ford Trucks last longer!

ONLY THE FORD BIG JOB

HAS ALL THESE FEATURES!

- ★ New 145-h.p. Ford V-8 engine for top performance.
- ★ Ford exclusive concentric dual-throat carburetor for more power, more economy.
- ★ New heavy duty 5-speed transmissions for operating flexibility.
- ★ Big Ford rear brakes for sure-footed stopping; 16-inch by 5-inch in the F-8.
- ★ Ford Super Quadrax 2-speed axle with vacuum shift for performance flexibility in Model F-8 (single speed axle also available); single-speed Quadrax Hypoid Axle in Model F-7.
- ★ Large diameter (10-inch) wheel bolt circle with 8 studs to allow for extra-strong hub construction.
- ★ Million Dollar Cab with Ford Exclusive Level Action suspension for greater driving comfort.
- ★ Nationwide service from over 6,400 Ford Dealers.
- ★ Ford Bonus Built construction for long truck life.

Gross Vehicle Weight Ratings: F-8 up to 21,500 lbs., F-7 up to 19,000 lbs. Gross combination ratings: F-8 up to 39,000 lbs., F-7 up to 35,000 lbs.

FORD 1949 *Bonus Built* TRUCKS 1953

BUILT STRONGER TO LAST LONGER

USING LATEST REGISTRATION DATA ON 5,444,000 TRUCKS, LIFE INSURANCE EXPERTS PROVE FORD TRUCKS LAST LONGER!

fuel oil & oil heat

um industry, urging it to contribute its full share toward increasing the American standard of living, assuring adequate oil supplies for peace and war, maintaining the oil supply and strengthening the American system and way of life. More specifically, the statement endorses the present system of oil industry operation within the competitive system, and recognizes the vital part the independent distributor plays in the oil distribution system.

"All segments of the oil industry continually require capital to replace obsolete equipment and to expand their facilities and operations," the policy statement says. "These requirements are increasing as the population grows and the American standard of living is raised to higher levels. The bulk of the capital the industry employs has been created by the industry out of its own operations. Its future needs can best be met under a system of free markets and suitable tax provisions.

"In addition, it is important that conditions be such as to encourage the thousands of small operators who are indispensable to a vigorous industry When all segments of the industry are able to function in an atmosphere of confidence and stability, the extension of credits is facilitated and they are assured of sufficient capital to operate successfully.

"Most oil distributors are independent businessmen who buy at wholesale. The marketing of petroleum is particularly suited to operations by individuals and small units, and the industry considers that the public interest will be served by continuing to encourage the existing competitive system."

EDCO NO. S-252

THE FILTER

with 98 sq. in. of surface area

Your BEST Filter Buy For PERFORMANCE and PROFITS

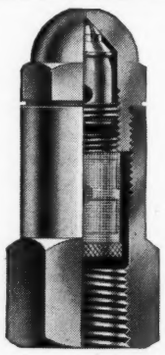
Even microscopic oil impurities are filtered out as oil flows freely thru the 98 square inches of surface area. The specially designed cartridge with the extensive area, gives maximum protection to oil burners, space heaters and water heaters using 1, 2 or 3 fuel oils.

Better Value for Less Money

Because of its extra large surface area EDCO filter lasts longer, gives customers maximum protection and keeps them happy.

And the price is right!

ORDER A SUPPLY TODAY



EDCO NOZZLES
Designed to stay clean longer and TRIPLE-TESTED — for spray angle, atomization and actual rated capacity.

EDCO

EDDINGTON METAL SPECIALTY CO.
P. O. BOX K, EDDINGTON, PA.

Oil Storage Increased In Buffalo (N. Y.) Area

HUGE STORAGE TANKS have been sprouting like mushrooms in Buffalo, N. Y., adding many millions of gallons in capacity to meet a pressing industrial need or an enormous consumer demand for petroleum products. The tanks are particularly important to Buffalo in that they provide a winter petroleum reservoir when lake shipments are cut off.

Gulf Oil Corporation, has put up ten new tanks for domestic fueloil, kerosene and gasoline, doubling storage capacity to a total of 10,000,000 gallons "so that the chances of running out practically are gone." There's a new Gulf warehouse, too, for barreled and packaged petroleum goods. Cost of all this: "well over $500,000."

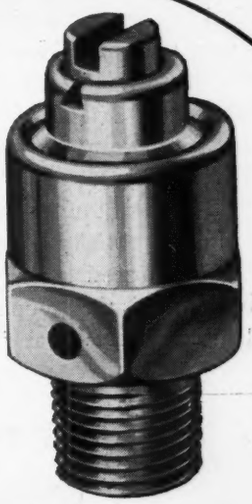
The Goetz Oil Corporation has just finished constructing three new 1,000,000-gallon tanks for fueloil at a cost of $30,000 each. Goetz expects to put up another 2,000,000-gallon gasoline tank next Summer. Frontier Fuel Oil has increased the capacity of its refinery by 14,000,000 gallons a year, which has the same end effect as adding storage tanks. Cost $350,000.

Colorado Fuel & Iron's Wickwire Spencer Division has just completed a new 7,000,000-gallon fueloil storage system "to guarantee an uninterrupted supply during winter months."

Republic Steel has just finished and filled new tanks that increase fueloil storage capacity here to 11,000,000 gallons from 5,000,000 gallons. Semet-Solvay also has a couple of brand-new storage tanks.

CONTROL WITH DOLE

New! Automatic Air Valve for Hot Water

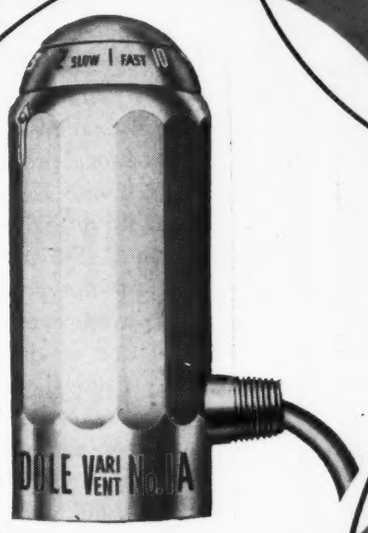


SELL FUEL SAVINGS

Check all one-pipe heating systems ... suggest fuel savings by replacing faulty air valves with the Dole No. 1A Vari-Vent (shown below). Important economies also in vacuumizing open systems with No. 2A Dole Vari-Vent Valves.

Automatic Venting on Hot Water Systems — Dole No. 20 is the first *fully* automatic hot water air valve. Vents forced or gravity circulating systems. No preliminary soaking . . . new or existing systems.

CONTROL WITH DOLE



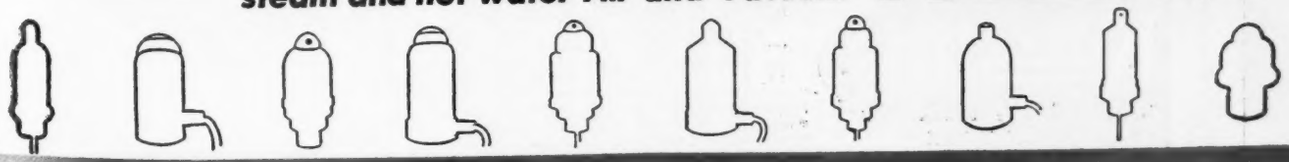
CONTROL WITH DOLE

Versatile! Essential! Profitable!

Another good profit item — easy to sell. The Dole Water Mixer — designed especially for tankless heaters is almost a necessity with electric washing machines that require hot water in volume, yet where the danger of scalding must be avoided for bathing and dish washing. Many other uses.

DOLE VALVES

steam and hot water Air and Vacuum



Predicts 1949 Business 13% Higher Than 1948

BUSINESS will continue to boom in 1949, at a level topping the record year of 1948, according to Frank D. Newbury. Mr. Newbury, consulting economist for Westinghouse Electric Corp., predicts a gross national product of $260 billion for 1949—up $35 billion over 1948—in a copyrighted article published in *Industrial Marketing*.

Mr. Newbury's forecast is based on the same technique he applied in correctly forecasting record business in 1947 and 1948—at a time that other economists in government and industry were warning of impending depression.

Mr. Newbury's technique, reduced to its simplest terms, is based on the important relationship between total investment spending and total national production. But, while the initiating effect of investment spending on business activity is generally recognized, what is possibly new in the Newbury procedure is the grouping of government expenditures of an investment nature with the more familiar investment expenditures of private business. Total investment is the key to total product, according to this theory, the ratio being roughly that of $20 to $100.

In support of this contention, Mr. Newbury says, "During peaceful, prosperous years there is a fairly constant ratio of total investment expenditures to total national production of about 20%. In 1929 with gross national product of about $100 billion, total investment amounted to $20 billion. In 1947, with gross national product of $231 billion, total investment was $50 billion. At the bottom of the long depression—in 1932—national product dropped to $58 billion and total investment dropped much more to about $5 billion. So, over this wide range from prosperity to depression, and with the war and post-war growth, investment expenditures have been a dependable guide to total business activity."

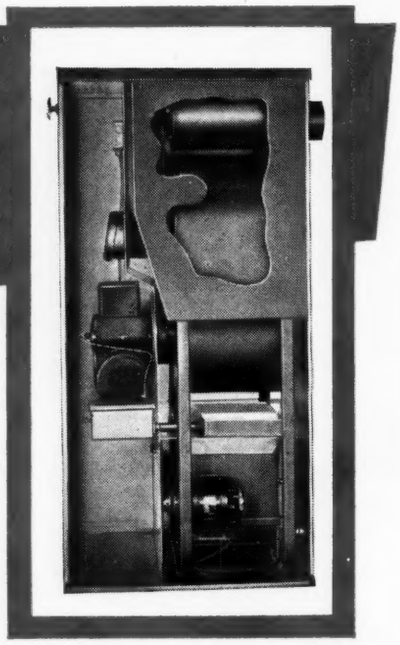
"In 1947, $50 billions of investment corresponded with $231 billions of gross national product—the market value of total national production of all kinds of goods and services. In 1948, $56.5 billions of investment increased gross national product at a slightly higher ratio up to $225 billions. Then, at about the same ratio, $59 billions of total investment would correspond with $260 billions of gross national product."

"Those three long paragraphs of Z's are when you dozed off while dictating"

YOU'LL DO A VOLUME BUSINESS WITH THE

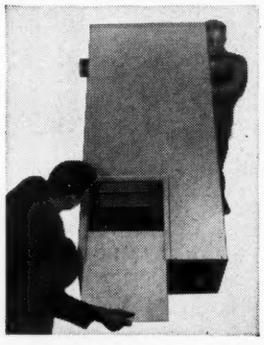
Kaustine

065HB HIGH BOY



Your prospects for automatic oil-fired winter air conditioning are unlimited when you stock this Kaustine Model —the 065HB High Boy. It's priced to let you in on the ground floor when you are bidding on a housing project. It's a natural, for cottages or small homes, garages, service stations, small shops. It's dimensioned for utility room installation or for basement installation as a pipeless furnace.

LOOK AT THIS NEW EASE OF INSTALLATION



By tipping the unit and sliding out a panel, the air filter can be placed on either right or left-hand side, without cutting or patching.

The unit is shipped complete, wired and ready to slide from packing case into position and connect.

SPECIFICATIONS: 24½ x 31½ x 62½. Right or left cold air intake. Furnished with "Gun" Pressure Type Oil Burner, flange mounted. 65,000 B.T.U., Chrome Steel firepot. 9" Blower. Float type Pan Humidifier.

Write for complete details

KAUSTINE QUALITY SERVICE SATISFACTION

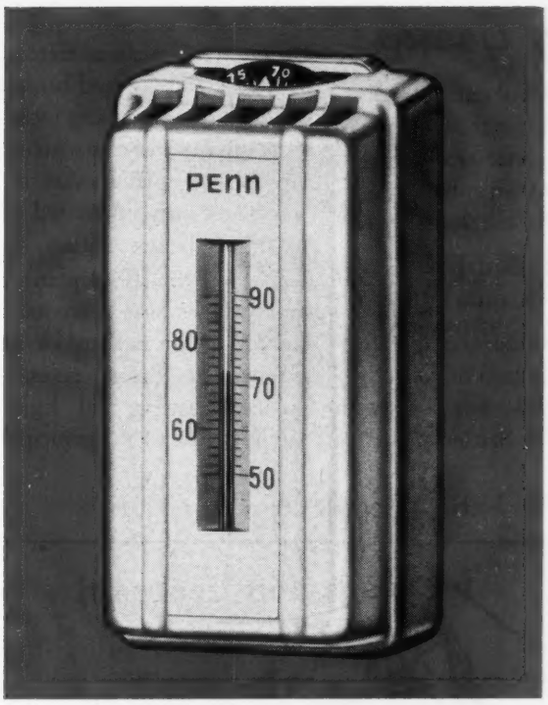
Kaustine COMPANY, INC. PERRY, NEW YORK

BACKED BY NATIONAL ADVERTISING ...BY MORE THAN 34 YEARS SERVICE TO THE AMERICAN HOME OWNER

Modulated Warm Air Furnaces, Septic Tanks, Septic Sewage Disposal Equip., Metal Tile Connectors, Oil and Gasoline Storage Tanks, Hydro-Pneumatic and Water Storage Tanks, Pressure Vessels, Truck Tanks, Custom Built Fabricated Equip., Transfer Pumps

"I always drive with the emergency brake on just as a safety precaution"

"Years Ago I Learned That



PENN THERMOSTATS BANISH 'COLD 70' *and That's a Fact!"*

"Cut through all the fancy language about thermostats and you find the heart of the matter is comfort—real heating comfort. With automatic heat of any kind that means frequent, short burner operations in place of longer 'on' and 'off' periods. That's what Penn achieved—15 years ago—with *heat anticipation.* That's why Penn thermostats, during all these years, have given the *closer* temperature regulation that means real comfort—an end to zig-zag heating and the shivering of 'cold 70'; and that means good customer relations."

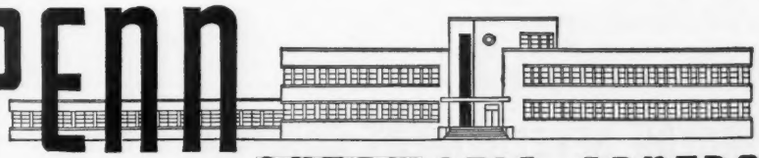
Take a tip from this typical experience of heating dealers—give your customers the comfort, and yourself the satisfaction and profit, which the Penn *original heat anticipating thermostat* assures. You'll appreciate *the simplicity* of the two-wire installation, the snap-acting contact structure and the all-around dependability of Penn thermostats. They banish "cold 70"—and that's a fact. **Penn Electric Switch Co., Goshen, Ind.** Export Division: 13 East 40th St., New York 16, U.S.A. In Canada, Penn Controls Ltd., Toronto, Ont.

Here's What Penn Heat Anticipation Does . . .

* **Holds the temperature at selected level—within one degree or less;**
* **Avoids "cold 70"; ends discomfort of "zig zag" heating.**
* **Automatically compensates for outside weather conditions.**
* **Provides more frequent, short burner operations instead of longer runs and standby periods, assuring even flow of warmth for greater comfort and fuel economy.**

It "hugs" the selected level for closer temperature control

PENN



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES

fueloil & oil heat

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Group's activities to reach the editor by the 20th.

Independent Oil Men Hold Annual Meeting

THE ANNUAL MEETING of the Independent Oil Men's Association of New England, Boston 16, Mass., was held January 18 at the Hotel Statler. Program for the one day gathering consisted of an afternoon business meeting, followed by a cocktail hour and banquet. Agenda of the business meeting included reports from officers and committees, election of officers and introduction of Joseph B. Wells, recently appointed executive director of the association.

The IOMA 1949 plan of operation and policies was introduced and discussed at the meeting, with particular emphasis on prices, taxes, competitive tactics, margins and legislation. Mr. Wells delivered the principal address at the evening banquet with his subject, "Where Are We Headed in 1949?"

Burning Oil Distributors Elect Jonswold President

AT THE ANNUAL MEETING of the Burning Oil Distributors Association, Chicago 4, Ill., held December 20, election of officers for 1949 was held. C. R. Jonswold, Arrow Petroleum Co., was named president; R. J. Thompson, Apex Motor Fuel Co., vice president; I. L. Schurman, Consumers Petroleum Co., treasurer and J. E. Guilbault, South Side Petroleum Co., corporate secretary. F. B. Caldwell was retained as executive secretary.

Four directors were appointed for a two-year term. They are Mr. Schurman and T. H. Gish, Consumers Petroleum Co.; J. K. Curran, Suburban Oil Co. and J. Loeffler, Commerce Petroleum Co.

Massachusetts Dealers Hear Talk on Sales and Margins

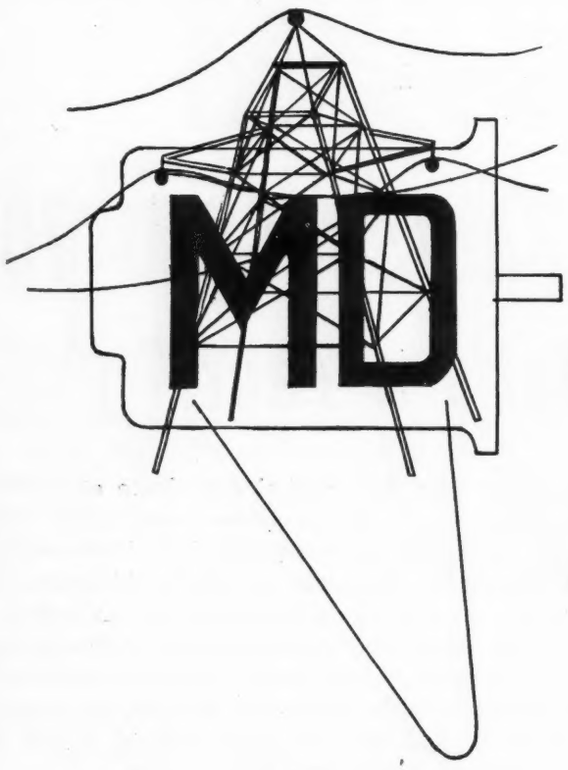
THE 159TH MEETING of the Massachusetts Oil Heating Association, Inc., Watertown 72, Mass., held on January 20 at the Fox and Hounds Club, Boston, featured an address by Robert Gray, business manager, FUELOIL & OIL HEAT. The talk dealt primarily with methods for reviving active burner selling and included a discussion on fueloil margins.

Members of the Oil Heat Institute of New England and Independent Oil Men's Association, both Boston, were invited to participate in the dinner meeting.

Convector Association Conducts Education Program

A SERIES of clip sheets, issued by the Convector Manufacturers Association, has been the nucleus of a consumer education program to provide information and facts about convector heating. The sheets have been prepared by Lawrence H. Selz Organization, Chicago 1, Ill., written to contain no trade names nor mention of individual companies.

Designed for use on newspaper home building, maintenance and women's pages, the copy describes convector principle of operation, applications to various types of domestic and institutional heating, all in non-technical terms for the benefit of home owners and modernizers.



SOURCE OF POWER

Performance in emergency is power preferred.

Compared with others, MD motors will deliver more power per pound.

MD motor's reliable built-in relay starts heavy loads at low voltage.

MD motors have ability to perform even under extreme conditions.

MD motors insure power to operate where needed and when needed.

ELECTRIC MOTOR DEVELOPMENT COMPANY
WICKLIFFE, OHIO

Duty-Designed
FOR SMALL HOMES BY
TIMKEN
Silent Automatic

Timken Silent Automatic "Duty-Designed" oil heating equipment satisfies every small-home demand for quietness, dependability, compactness and fuel economy . . . plus low first cost in keeping with small-home budgets.

- BUILT RIGHT
- PRICED RIGHT
- DESIGNED RIGHT

TO PUT YOU ON TOP OF THE SMALL-HOME MARKET!

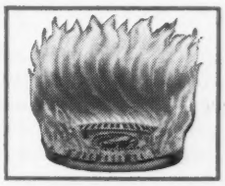
NEW "DUTY-DESIGNED" LO-BOILERS, incorporating every wanted, needed feature for finest small-home heating, are ready in a wide range of capacities from 25,000 to 110,000 Btu. per hour output. Two cabinet types—deluxe and special. Three heat exchanger types—copper coil, cast iron and steel. Tandem installations are recommended for larger homes. Write for literature today!

Other "Duty-Designed" units include Hi-Boilers, Hi-Furnaces, coil and tank-type Water Heaters, and standard-design Oil Furnaces.

When you offer a range of units as broad as the Timken Silent Automatic "Duty-Designed" line—all built expressly to meet small-home heating needs—you're set up to sell the cream of America's biggest heating market!

Here's equipment that's *exactly* what architects, builders and owners want and need today. Newly engineered from base to boiler outlet—and totally unlike anything else on the market—these "Duty-Designed" units are truly in a class by themselves. For quietness, reliability, compactness, and fuel economy, they have no equal.

What's more, this quality-built equipment is priced to meet the small-home owner's pocketbook—priced to beat your competition to a standstill. Today, more than ever before, *it pays to sell the Timken Silent Automatic line!*



THIS WHISPER-QUIET WALL-FLAME FIRES EVERY "DUTY-DESIGNED" UNIT

The famous Wall-Flame Burner—especially designed for unit operation and equipped to burn the new catalytically-refined fuel oils—is the heart of every Timken Silent Automatic "Duty-Designed" oil heating unit.

Models shown (OBD-50, OBA-65, OBG-85) illustrate three types of heat exchangers, copper coil, cast iron and steel.

TIMKEN *Silent Automatic* OIL HEAT

TIMKEN SILENT AUTOMATIC DIVISION
The Timken-Detroit Axle Company • Jackson, Michigan

Accepted S A Standard
TRADEMARK REGISTERED

fueloil & oil heat

Name NPC Committee On Mineral Industries Census

A NINETEEN MAN COMMITTEE on Mineral Industries Census has been appointed by Walter S. Hallanan, chairman, National Petroleum Council, Washington 6, D. C. The move was made in response to a request from Robert E. Friedman, acting director, Oil and Gas Div., Department of the Interior, for a committee to study the desirability of a petroleum census to be taken in 1950, to cover 1949.

Among members of the committee are: H. S. M. Burns, Shell Oil Co., Inc., New York, designated chairman; Max W. Ball, Washington; William R. Boyd, Jr., American Petroleum Institute, New York; Russell E. Brown, Independent Petroleum Association of America, Washington; Fayette B. Dow, National Petroleum Association, Washington; B. Brewster Jennings, Socony-Vacuum Oil Co., New York and Joseph E. Pogue, Chase National Bank, New York.

Congress has passed a law establishing the census on a five-year basis, but in the last session failed to appropriate funds for mineral industries. The Bureau of Census and Bureau of Mines would conduct the proposed canvass jointly to eliminate duplicate requests for data and at the same time further details on employment and operations would become available.

IGNITION AT ITS BEST

Oil-burner ignition is at its best when an oil burner is equipped with a Dongan Ignition Transformer — the transformer with many outstanding construction features. It's standard equipment on leading makes of oil burners.

IMMEDIATE SHIPMENT OF STANDARD TYPES

DONGAN ELECTRIC MFG. CO.

2981 Franklin Detroit 7, Mich.

The Dongan Line Since Nineteen-Nine

Write for NEW CATALOG

DONGAN TRANSFORMERS

Warm Air Association Re-elects Slate of Officers

ANNUAL ELECTION of officers held at the 35th convention of the National Warm Air Heating and Air Conditioning Association, Cleveland 14, Ohio, resulted in the same slate of officers being named for 1949. Renominated and unanimously elected were President Atlee Wise, Wise Furnace Co.; 1st vice president Clarence Franke, American Furnace Co.; 2nd vice president W. D. Redrup, Majestic Furnace Co.; secretary-treasurer George Boeddener. All become members of the association's board of trustees.

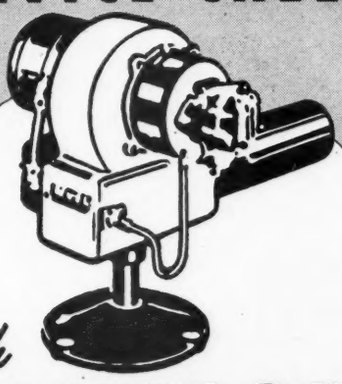
Named for two-year terms to the board of trustees were: H. C. Curtis, Auer Register Co.; E. H. Paul, Clayton & Lambert Mfg. Co.; Frank L. Meyer, Meyer Furnace Co. and G. W. Denges, Williamson Heater Co. Remaining members on the board of trustees, whose terms expire this year, are: P. T. Cheff, Holland Furnace Co.; E. B. Lau, Lau Blower Co.; C. B. Phillips, Surface Combustion Corp.; A. W. Wrieden, Lennox Furnace Co. and ex-officio member, F. E. Mehrings, Meyer Furnace Co.

NAFM Adopts Standards For Certified Fan Ratings

TO IDENTIFY fans that have been tested in accordance with the Standard Test Code for Centrifugal and Axial Fans, developed by the National Association of Fan Manufacturers, Detroit 2, Mich., a standard label has been adopted. The American Society of Heating and Ventilating Engineers and the American Society of Mechanical Engineers cooperated in the venture, the outgrowth of many years of independent research sponsored by the fan group and the ASHVE.

Under a licensing arrangement, for which no charge is made, fan manufacturers will be permitted to use the seal.

Greater Profits thru FEWER FREE SERVICE CALLS



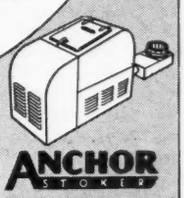
With ANCHOR OIL BURNER

After you install the ANCHOR OIL BURNER you seldom need to make *free* service calls . . . thus, you profit *more.* The ANCHOR OIL BURNER is fully automatic . . . the ideal conversion unit. Due to nationwide acceptance of name and product it sells *on sight!* Installation is economical . . . instant . . . easy. *Plan* future *profits!*

Write today for literature on this or any other ANCHOR heating equipment. Anchor Division, Stratton & Terstegge Co., Inc., P. O. Box 311, New Albany, Indiana.

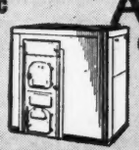
ANCHOR AIRE OIL FIRED FURNACE

ANCHOR BOILER DOMESTIC BOILER



ANCHOR STOKER ANTHRACITE AND BITUMINOUS STOKER

ANCHOR AIRE GAS FIRED FURNACE



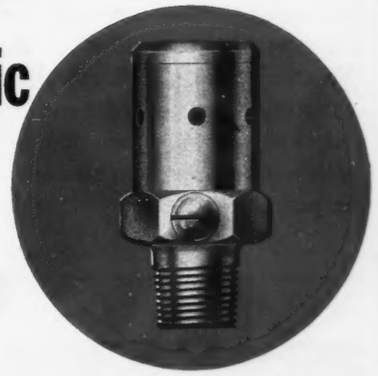
ANCHOR AIRE COAL FIRED FURNACE

ANCHOR

"America's Finest Heating Equipment"

NEW TACO-VENT

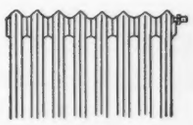
automatic venting air valve for ALL Hot Water jobs



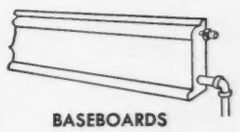
PAYS FOR ITSELF IN HEAT SAVINGS

Here's what we've all been waiting for . . . a truly automatic hot water self venting air valve. Install it in any position but upside down and it works perfectly.

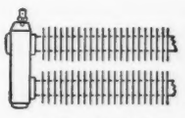
It's easy to install. Just take it out of the box and screw into tapping. **No adjusting is necessary.** Works just as well with convectors and high points as it does with radiators and baseboards.



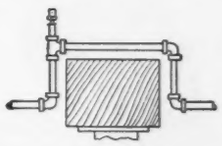
RADIATORS



BASEBOARDS



CONVECTORS



HIGH POINTS

"Better Heating . . . Better With Taco"

TACO HEATERS, Incorporated

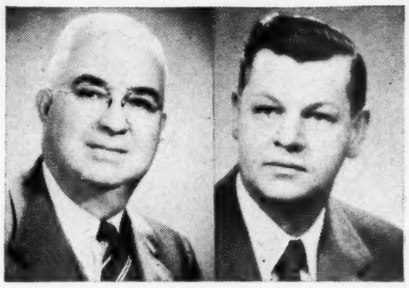
137 South St., Providence 3, R. I.

Manufacturers Activities

"Doc" Ford Relinquishes Duties to Wiechers at Webster

E. M. FORD, one of the pioneers in the development of the oilburner industry and sales manager, industrial division, Webster Electric Co., Racine, Wis., has relinquished his management position and its responsibilities to Ben T. Wiechers, who has been his assistant for the past several years.

Mr. Wiechers, with Webster since 1930, spent five years in the engineering department and then entered the industrial sales department as eastern representative in New York. A graduate from the University of Wisconsin in 1928 as an electrical engineer, he assisted in the development work on two stage pumps and the first type D Webster unit. Mr. Wiechers was the first salesman in the industrial division, sent east in 1935 to help contact manufacturers when the load became too great for one man to handle. He was recalled to Racine during the war to head the company's sub-contract department.



Ford Wiechers

Webster is formulating plans now to establish company representation in the midwest, with headquarters in Racine, to supplement the activities of H. B. Hastings, White Plains, N. Y. in the East; Paul B. Maurice, West Coast representative in Seattle and Perry Yelton, representing the industrial and sound divisions in the San Francisco territory.

Few men are better known or liked than Mr. Ford, or "Doc," a boyhood nickname acquired when he worked in a drug store. Born on a farm in Muhlenberg County, Ky., "Doc" was educated in the schools of Mt. Vernon, Ind. His early acquaintance with S. Arthur Loeb, president of Webster Electric, began when both were exhibiting their products in tents at state fairs. Webster was producing at that time a magneto for farm engines and "Doc" was sales manager for a Michigan manufacturer of ignition coils. They got together and "Doc" joined Webster in 1918 as sales manager. When a customer in 1925 wanted an ignition coil to take the place of batteries, they developed a Varley type ignition coil which progressed to the manufacture of a direct ignition transformer. At the time, the idea was so new that the company worked with Underwriters' to establish standards.

Transformers led to fuel pumps, early day equipment consisting of a pump, pressure valve and strainer, all separate. In 1932 the company began building a two stage pump, in response to inquiries from transformer customers, and a year later, produced the first two stage unit.

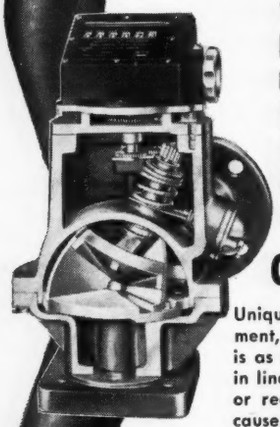
Recalling the success of magneto service stations established in the early twenties, "Doc" began to organize the present nation-wide system of Webster Electric authorized service stations.

"Doc" — only his more intimate friends know him by his given names,

HOW TO MAKE UP YOUR MIND ABOUT METERS

Naturally, you want a meter so nearly perfect you can put it on the job and forget it. Here are the features an outstanding meter should give you:

TROUBLE-FREE OPERATION . . . . . ☑ Granco
FAST DELIVERY . . . . . ☑ Granco
GUARANTEED ACCURACY . . . . . ☑ Granco
LONG SERVICE . . . . . ☑ Granco
LOW INITIAL and MAINTENANCE COST . . ☑ Granco
ACCURATE PERFORMANCE at all VISCOSITIES ☑ Granco
QUICK, EASY CALIBRATION . . . . . ☑ Granco



ONLY GRANCO HAS THEM ALL!

Unique rotary action and fewer working parts give precise measurement, trouble-free operation and longer life. GRANCO Meter action is as simple as a mill wheel turning in a brook. Rotor turns directly in line of flow with friction-free "feather weight" action. No eccentric or reciprocating movements to interrupt the smooth flow of liquid, cause slippage or turbulence in the metering chamber. GRANCO Meters have an extremely low pressure drop. Easy, accurate calibration. Dial on outside of meter tells you how at first glance.

THERE'S A GRANCO METER TO FIT YOUR NEED
See your distributor, or write today for full particulars. GRANCO sales and service throughout the nation.

Granco

GRANBERG CORPORATION
Oakland 8, California

Also makers of Granco Rotary Positive Displacement Pumps

ONE TUTHILL FUELSTAT CAN SERVE THESE FOUR REQUIREMENTS

Clockwise rotation and right-hand nozzle port (as shown)

Counter-clockwise rotation and right-hand nozzle port

Clockwise rotation and left-hand nozzle port

Counter-clockwise rotation and left-hand nozzle port

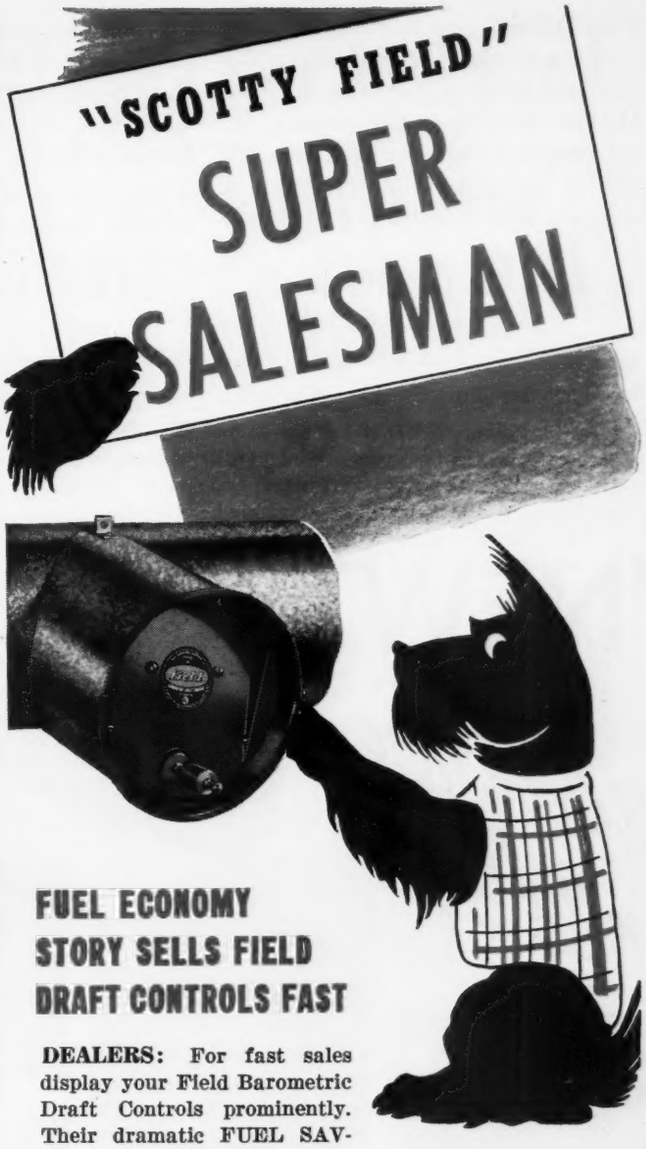
Exclusive Tuthill features make it possible to fit the same Model 3OEN Fuelstat to any one of these requirements *in the field*—quickly and easily.

Write for full details.

TUTHILL PUMP COMPANY
939 E. 95th Street, Chicago 19, Ill., Phone REgent 4-7420

fuelfoil & oil heat

"SCOTTY FIELD" SUPER SALESMAN



FUEL ECONOMY STORY SELLS FIELD DRAFT CONTROLS FAST

DEALERS: For fast sales display your Field Barometric Draft Controls prominently. Their dramatic FUEL SAVING story makes them best-sellers, self-sellers!

A Field Barometric Draft Control improves the performance of any heating plant—provides for lower fuel consumption, increased safety, longer plant life. That's why dealers find it profitable and easy to sell the efficient, durable Field Barometric Draft Control. Write today for complete information on the Field Barometric Draft Control line.

On The Finest Heating Equipment Field Controls The Draft.

See our exhibit at the 9th International Heating and Ventilating Exposition, International Amphitheatre, Chicago, Jan. 24th to 28th, Exhibit No. 1221.

FIELD BAROMETRIC DRAFT CONTROLS

FIELD CONTROL DIVISION
H. D. CONKEY & COMPANY MENDOTA, ILLINOIS

AFFILIATES: CRANES—HOISTS

Field REGISTERED

AFFILIATES: BRICK—TILE—STONE

BAROMETRIC DRAFT CONTROLS

Elley Monroe—summarizes his many years on the road by explaining, "I've just spent my life calling on my friends." He has retired from active service, but will still have his desk at Racine and will be available when his advice or suggestions are needed.

Thatcher Completes New Color Slide Film

SUCCESS STORY, slide film just completed by Thatcher Furnace Co., Garwood, N. J., presents twenty-two minutes of interesting heating information. In full color, the film covers such topics as company history, policies, methods of production and distribution, discussion and illustration of the current line of Thatcher heating equipment.

The company is preparing a tentative schedule for showing the film at distributor, architect and trade association meetings through the country and is seeking inquiries for bookings and additional information about the film. This method of sales presentation has been selected by Thatcher because it is felt it furnishes the trade with an effective selling and educational tool and develops still further the close cooperation that the company always has sought to maintain with the industry.

Vermiculite Corporation Formed in New York City

FORMATION of the American Vermiculite Corp., New York 21, N. Y., to manufacture and sell South African vermiculite, has been announced. William S. Steele, a pioneer in the vermiculite industry, is president and director. Other directors are John R. Munn, Dr. Norman B. Tooker, Richard Whatham, Clifton Thomson and J. Gordon Mackay of Johannesburg, South Africa.

The company is licensing franchised companies to operate exfoliating and processing plants under its trade names and policies, in addition to its own activities along the North Atlantic Seaboard. Crude vermiculite is being obtained under exclusive contracts with producers in the Palabora district of the Transvaal, Natal and Rhodesia, Africa.

An advertising and sales program is planned featuring expanded vermiculite for home insulation, radiant heating, combustion chamber backfill, refractories, cements and other uses. In some areas combustion chambers and radiaton discs also will be featured.

Buying Company Formed To Purchase Burner Parts

ANNOUNCEMENT has been made of the formation of Association of Oil Burner Mfgrs., Inc., New York, to buy equipment for small and medium size oilburner manufacturers. The new firm is headed by Norman A. Lunenfeld, formerly executive vice-president of the Newark Transformer Company, who resigned to establish the new company.

"The importance of our service becomes apparent when it is realized that (1) more than 90% of the total cost of an oilburner is taken up with the purchase of standard branded component parts," says Mr. Lunenfeld, "and (2) the quantity discounts of the parts manufacturers run, in some cases, as high as 20% differential between the costs of the moderate and the large users. Arrangements already have been concluded with a substantial number of oilburner manufacturers to combine their purchase orders, and with several of the

"NEWTYPE"

A Good Hose on All Counts!

Easier to Carry Out

Off the reel and all the way to customer's connection . . . over steps or terraces; around corners . . . with progress unhindered by kinking or snagging.

Full, Fast Flow . . . Right Up To Nozzle

Unobstructed flow, even through reeled portion, at maximum capacity of rated I.D. of hose . . . the result of non-flattening construction and non-swelling tube.

Easier to Reel Up

Light weight, extreme flexibility and non-flattening feature make a quick, easy job of getting the hose back on the reel again.

TOUGH BROWN COVER

Highly resistant to abrasive wear. Provides lasting protection to hose carcass. Cuts hose replacement costs.

For Low-Cost Fuel Oil Deliveries

Contact Our Nearest Branch

GOODALL RUBBER COMPANY

GENERAL OFFICES, MILLS and EXPORT DIVISION, TRENTON, N. J.

Branches: Philadelphia • New York • Boston • Pittsburgh • Chicago • St. Paul • Los Angeles San Francisco • Seattle • Salt Lake City • Houston • Distributors in Other Principal Cities

Est. 1870

IT PAYS

to recommend and install

Klemm
FUEL OIL FILTERS

Equipped with CHEMISTONE
the original Controlled Porosity Element

MODEL FF 430G
with "Hi" Tensile
glass bowl.

On every service call, make it a point to suggest a Klemm Fuel Oil Filter as the best way to insure an *uninterrupted* flow of oil to the burners. *It traps dirt, sediment, water and other foreign matter.* All your customers need this protection. Klemm Filters are low-priced, dependable and highly efficient. You profit on each sale *and eliminate the cause of many unnecessary emergency calls.*

There are other filters but none with *Chemistone!*

HERE'S WHY KLEMM CHEMISTONE FILTERS SELL FASTER

Streamlined . . . lots of eye appeal —a carefully designed filter that looks right with the finest installation.

Engineered . . . Scientifically engineered to give 100% filtration under all conditions. Easy to clean —no tools or wrenches needed.

Packaged Right . . . Put up in dealer cartons of 12 each or, assorted. Stocks easily . . . ships safely.

Priced Right . . . Superior in action, it's priced for quick sales. You'll find it doubly profitable to push Klemm filters.

NOW A CHOICE

MODELS FF 430G, FF 401G with "Hi" Tensile glass Bowls
MODELS FF 430*, 401* with metal bowls

*listed for reinspection with Underwriters Laboratories

Write today for full information!

Klemm
AUTOMOTIVE PRODUCTS COMPANY

1718 Damen Avenue — Chicago 47, Illinois
Export Division: Guiterman Co., Inc., 35 S. Williams Street, New York 4, N. Y.

TRADE MARK REG.

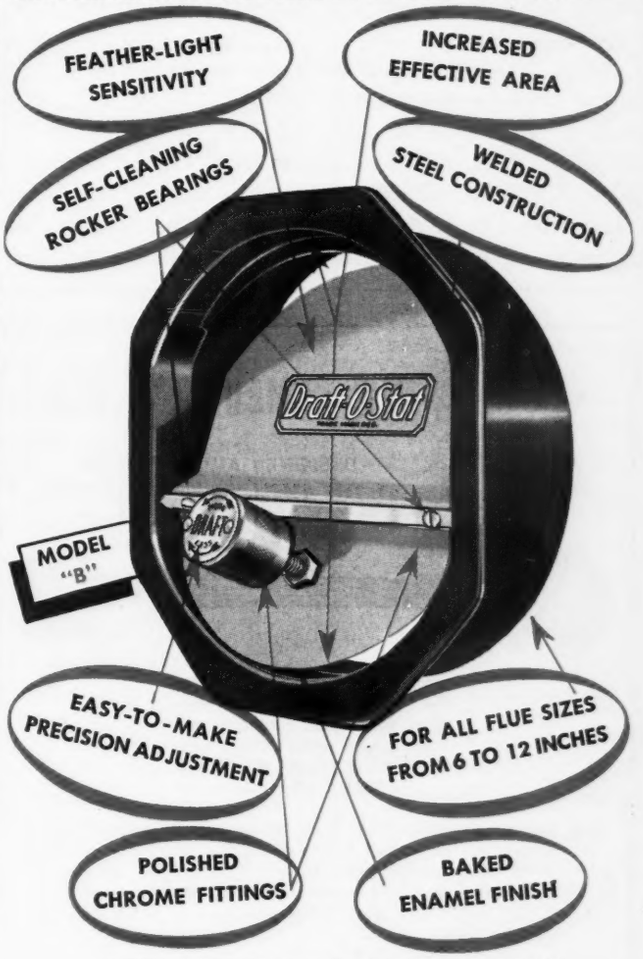
Draft-O-Stat

BAROMETRIC DRAFT CONTROL

...will help you build CUSTOMER GOOD WILL and PROFITS

Anything you can do for your customers to cut their fuel costs, give them greater heating comfort, reduce smoke and soot, and lighten their task of furnace tending, will pay off in good will, increased sales and profits. That's why it's good business to install Draft-O-Stat on every new installation, on repair jobs—or any other jobs where the furnace is not now equipped with adequate draft controls. Designed for greatest efficiency and long life, it insures a steady, unchanging rate of chimney draft, providing maximum utilization of furnace heat.

TOP PERFORMANCE IS INSURED BY THE FOLLOWING FEATURES



Model "A" Draft-O-Stat (original design) available in domestic sizes 14" to 20"; commercial sizes 16", 18", 20" and 24"; industrial sizes 24", 30" and 36".

There is only ONE DRAFT-O-STAT and HOTSTREAM makes it!

The HOTSTREAM Heater Co.

2363 EAST 69th STREET • CLEVELAND, OHIO

Manufacturers of water heaters and draft controls

leading standard parts manufacturers to make a group discount available."

Lynn Names President; To Push Power Burner Sales

E. K. PRIEST has been elected president, Lynn Products Co., Lynn, Mass., as of January 1, succeeding Ralph H. Illingworth. Mr. Illingworth, formerly president and treasurer will continue in the latter position. Ernest C. Leach, vice president, was re-elected.

Mr. Priest, connected with the stove industry for fifteen years, has been associated with the Floyd Wells Co. and Moore Corp. and formerly was a trustee and secretary of the Institute of Cooking and Heating Appliance Manufacturers. During the war he functioned as a member of the domestic appliance advisory committee, WPB.

Lynn Products, manufacturers of power oilburner and range burner lines, is developing a program to expand power burner sales, now available in two domestic and one industrial size, capacity range from 1 to 14 gph. The units will be produced for heater manufacturers and also offered as conversions. Range burners, sold for a number of years as conversion units, also have been available in recent years as assemblies for stove manufacturers.

Draw Five Winners in McDonnell-Miller Stakes

THE SWEEPSTAKES, conducted annually by McDonnell-Miller, Inc., Chicago 11, Ill., resulted in the selection of five winners in a drawing for prizes. To each person invited to participate in the drawing, the company sends a numbered ticket and deposits a stub with corresponding number in the grab bag. Witnesses to the selection in the 1948 Sweepstakes were Marc Bluth, secretary, Stoker Manufacturers Association, and Ray Malvin, works manager, Fitzgibbons Boiler Co.

First prize of a fishing outfit went to E. N. Black, representative, Fitzgibbons Boiler Co., Philadelphia, with Ken Baugh, Baugh Plbg. & Htg. Co., Logan, Utah, receiving the second prize of a Zenith radio. Fred Triggs, representative, Pacific Steel Boiler Div., Des Moines, Ia., won a traveling bag and electric blankets were awarded to the fourth and fifth prize winners, Bud Zemel, Sol Zemel Supply Co., Plainfield, N. J. and James P. Sullivan, Jamaica Plain, Mass.

Timken Host At Sellbration Vacation

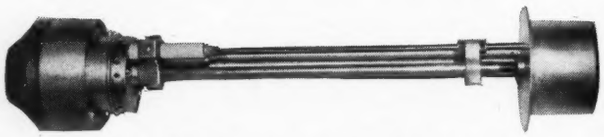
WINNERS in the annual sales contest, sponsored by Timken Silent Automatic Div., Timken-Detroit Axle Co., Jackson, Mich., were guests at a six-day all-expense vacation on the Mississippi Gulf Coast, December 12 to 18. Seventy-four members of the Timken organization participated, nineteen of whom were ladies.

The vacation, fourteenth in a series begun in 1929, included a full schedule of entertainment, social activities and side trips to Biloxi, New Orleans and Ship Island, the latter highlighted by a traditional Gulf Coast beach picnic. The New Orleans trip featured a sightseeing tour and dinner at a famous restaurant. Timken Silent Automatic officials are planning now for the next in the series of Sellbration contests, to start this spring and end sometime in the fall.

Now Available!

NEW COMBUSTION HEAD

DESIGNED AND PATENTED BY THE SHELL DEVELOPMENT CO.



Two important advantages for manufacturers whose pressure type burners are equipped with the new SHELL DESIGN COMBUSTION HEAD—

1 Economy of fuel. Field tests indicate 20% and more oil saving. A CO_2 as high as 15% is obtainable with no smoke, even when using 100% catalytic fuel oil. The oil situation makes such economy a positive necessity, and the CUSTOMER SATISFACTION produced is a real SALES PROMOTER.

WE SOLICIT INQUIRIES FROM MANUFACTURERS OF OIL BURNERS

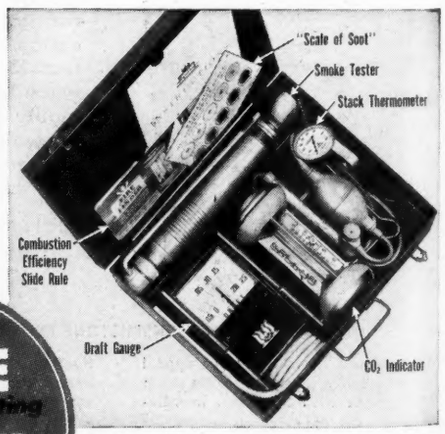
2 Replacement of obsolete, inefficient burners by burners equipped with the NEW SHELL DESIGNED COMBUSTION HEAD will be quickly paid for out of oil savings!

Manufactured by

MODERN DIE AND MACHINE COMPANY

166 PLEASANT STREET, BOSTON 25, MASS.

Under license from the Shell Development Company



The FYRITE Combustion-Testing UTILITY KIT

... PACEMAKER FOR PROFITS from Expert Heating Service

Making the most of your ability to do an expert tune-up job will pay you big dividends in gaining you competitive leadership and neighborhood recognition of your competence as a heating expert. The combustion-testing kit shown here contains precision-made quality instruments with which you can make fullest use of your know-how in making a fuel conservation survey, checking a burner for wornout parts and needed repairs, or running an efficiency test to close a replacement deal.

The kit contains the well-known FYRITE CO_2 Indicator, the versatile MZF Draft Gauge, the all-metal TEMPOINT Stack Thermometer and the sensationally new TRUE-SPOT Smoke Tester. Now, for the first time, you can adjust an oil burner quickly and expertly for highest CO_2 without objectionable smoke . . . do away with guesswork, and "hit and miss" fumbling in adjusting for clean firing. The "Scale of Soot" which comes with the TRUE-SPOT tells you the limits of permissible smoke for various burners and types of heating systems. This amazingly simple method of oil burner adjustment is the greatest advance in combustion testing since the introduction of the FYRITE. You will be proud to be among the first to own this "up-to-the-minute" combustion-testing kit.

Price, at dealer's level, only $67.00.

TRUE-SPOT Smoke Tester only . . . . . dealer's net, $17.00.

For complete information on this and other new tune-up equipment—write for Leaflet 752.

BACHARACH INDUSTRIAL INSTRUMENT CO.

7000 Bennett Street - Pittsburgh 8, Pa.

WHAT DO YOU KNOW!

SID HARVEY Repair Department Again Broke all Records in 1948

81,342 Rebuilt parts, (averaging over 350 each working day) produced in 1948!! Every part carried this label —your guarantee that each unit had been completely reconditioned to operate with "factory-new" performance.

With production figures of the industry, in general, really down from the peak year of 1947, we admit we were surprised, (startled is a better word) to find that sales of SID HARVEY REBUILT PARTS knocked all previous output to a frazzle. No one cares for statistics, but everyone likes success. So, if more and more oil burner repairs were made with SID HARVEY'S GUARANTEED REBUILT parts that means more satisfied customers—more folks preferring to buy from SID HARVEY'S. We're pretty proud of this and it encourages us to find still further ways and means to make our service even better.

HERE'S THE RECORD:

37,647 Pumps and Fuel Units, 22,196 Relays and Combustion Controls, 9,549 Thermostats and Limit Controls, 6,220 Transformers and 5,730 Motors made up a total of 81,342 Rebuilt Parts turned out by SID HARVEY'S in 1948.

SID HARVEY OF MASS., INC.

566 Cambridge St.
Allston Station, Boston 34, Mass.

SID HARVEY OF PA., INC.

715 S. 50th St.
Philadelphia 43, Pa.
Branch: 511 W. Lindley Ave.
Philadelphia 20, Pa.

SID HARVEY OF MD., INC.

347 Cedar St., N. W.
Washington 12, D. C.

SID HARVEY INC.
VALLEY STREAM, NEW YORK

104 E. MINEOLA AVE., VALLEY STREAM, N. Y.
138 Queens Blvd., Jamaica, N. Y.
909 Main St., New Rochelle, N. Y.
1825 Stratford Ave., Bridgeport, Conn.

SID HARVEY OF N. J., INC.

103 Lindsley Ave., Newark 6, N. Y.
5 Prospect St., New Brunswick, N. J.
1616 Bergenline Ave., Union City, N. J.

fueloil & oil heat

JOBBERS!

Below is a partial list of "Sid Harvey" Jobbers who carry REBUILT EXCHANGES on hand. Leave your old parts—pick up a reconditioned one at your favorite wholesaler.

CONNECTICUT

Oil Equipment Center, 677 Dixwell Ave., New Haven

DELAWARE

Greenberg Supply Co., 216 West 4th St., Wilmington

MASSACHUSETTS

Corcoran Supply Co. of Brockton, 300 Montello Street, Brockton

NEW JERSEY

Davall's, 308 North Broadway, Gloucester City
Millville Plumbing Supply Co., Columbia Ave., Millville
H. W. Deacon Supply Co., Hainesport, Mount Holly, N. J.
Penns Grove Plumbing Supply Co., Penns Grove
Jaeger's Sales and Supplies, 216 S. Warren St., Trenton
Budd's Supplies, Inc., 244 S. Broad St., Woodbury

NEW YORK

Automatic Supply Co., 28 Madison Ave., Albany
Triplex Supply Co., Inc., 21 E. Union St., Bay Shore
Wallack-Hollander, 13 School St., Glen Cove
Mileen & Co., Inc., 1835 New York Ave., Huntington Sta.
Canfield Supply Co., 534 Broadway, Kingston
Blackman-Hoffman, Inc., 348 Broadway, Lynbrook
Orange County Plumbing Supply Co., 34 Cottage St., Middletown
Eastern Supply Co., 531 E. Third St., Mt. Vernon
Aetna Supply Co., 2720 Third Ave., New York 54
J. S. Carpenter, 250 St. Paul St., Rochester 4
A. Alport & Son, Inc., South Fallsburg
Ben Goldin, 133 Post Ave., Westbury

PENNSYLVANIA

Fuel Savers Inc., 1501 Herr St., Harrisburg
B. Roy Snavely, 105 S. Christian St., Lancaster
Petroleum Pipe & Supply Co., Inc., 1529 Federal St., Pittsburgh 12

RHODE ISLAND

Sims Corporation, 55 Sims Ave., Providence 9

VERMONT

S. R. Carter Supply, Inc., 105 St. Paul St., Burlington

VIRGINIA

Refrigeration Supply Co., 1831 W. Broad St., Richmond 20

Boston Machine Works Meets With Association

ON JANUARY 6, representatives of Boston Machine Works Co., Lynn, Mass., met with members of the Automatic Heating Association of North Worcester County, a group of independent heating men who handle oilheating equipment. The meeting was held in the offices of the Royal Steam Heater Co., Gardner, Mass.

During the gathering, Ralph L. Dennis, sales manager, Boston Machine Works and I. M. Nelson represented the company. Mr. Nelson delivered the principal address, presenting the entire BOSMACO line of nozzles and nozzle kits, combustion chambers, tank gauges, firebox baffles, draft controls and the Boston Breese horizontal burner.

Complete Reorganization Of Isolantite, Inc.

ISOLANTITE, INC., pioneer manufacturers of steatite and porcelain insulators, has completed its reorganization. Formerly located at Belleville, main offices now are situated at Warren St., Lyndhurst, N. J. Plans for a new plant are being drawn up. Frank J. Stevens has been elected president of the company, with Paul H. Mouraud, vice president and treasurer and John Simons, secretary.

Isolantite will furnish its prewar type of special designs, pressed, extruded or machined in steatite, porcelain, refractories or compressed products. Engineering service also is to be offered for electrical and mechanical design problems.

National Advertising To Feature NuWay Campaign

AN OILBURNER ADVERTISING CAMPAIGN, contemplated by NuWay Corp., Rock Island, Ill., for 1949 again includes a program of national consumer advertising. Sales Manager O. K. Gipple reveals that the company this year will present its message regularly to more than six million readers by insertions in *American Home, Better Homes and Gardens, House Beautiful* and *House & Garden.*

Theme of the campaign will stress cost-saving conveniences of NuWay oilburners, particularly, positive air control and nozzle shield, two patented features. In addition, the company will continue its direct mail program, which includes local newspaper mats for dealers, an 8-page NuWay oilburner book and a catalog and instruction book.

Arco Publication Shows Suggested Advertising Aids

A GENERAL MAT SERVICE publication to help dealers promote American-Standard products in their local communities, has been prepared by the American Radiator & Standard Sanitary Corporation, and is now ready for distribution.

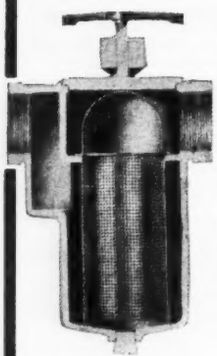
This mat service is free. It includes general information on proper methods of advertising, suggested advertisements and copy for radio announcements, direct mail aids, and suggestions on how contractors can benefit from publicity.

The 40-page tabloid contains 100 complete advertisements, in sizes running from one to five columns in width. The mats or electros described are offered free by American-Standard to add punch to local advertising campaigns. The mats and electros are available through wholesale distributor of American-Standard products.

KRAISSL SEPARATORS

Listed by Underwriters' Laboratories

REMOVE SLUDGE AND DEBRIS FROM DOMESTIC AND INDUSTRIAL OIL LINES



Single and Duplex Separators — both Standard and High Pressure—for light and heavy oil. You can have any practical degree of separation by simply changing the basket —no tools needed. Outside installation gives instant, easy access *without the dismantling of your burner.*

Eliminate filter replacement costs entirely — cleaning of Kraissl filter baskets restores original efficiency.

Request our Bulletin A-1214 for full data.

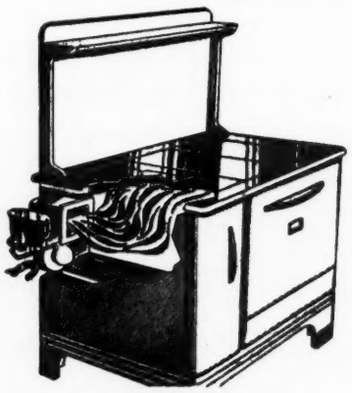
295 WILLIAMS AVE.

KRAISSL THE KRAISSL COMPANY HACKENSACK, N. J.

Profits!

Through the

SUPER-THERM *Combination* OIL BURNER



SALES prospects for this modernizing, easily installed oil burner are *all* owners of gas, wood and coal stoves and ranges. Super-Therm fits any size stove, front or rear —will last a lifetime—will not soot or smoke—has automatic safety features. Write now for details and *dealer profit* facts.

THERM OIL BURNER CO.

Pioneers of the Oil Burning Industry

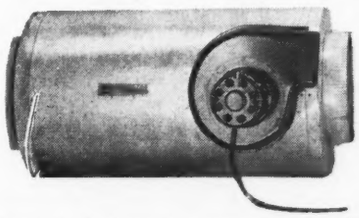
2105A Westlake Avenue

SEATTLE 1, WASHINGTON

New Products

Rayfield Heat Reclaimer Installed in Smoke Pipe

A NEW UNIT, announced recently by C. L. Rayfield Co., Chicago 8, Ill. and known as the Automatic Heat Re-



claimer, is designed to recapture lost heat from any standard heat generating device, whether automatically or hand-fired. The Heat Reclaimer is installed in place of any 24" pipe section of smoke pipes with diameters from 5" to 10". Electrical connection, to operate the unit's blower, can be made with any outlet or put in series with the master control on automatic systems.

Flue gases, passing through the smoke pipe, give up heat to twelve internal heat transfer fins in the unit. Thermostatic control actuates a motor and blower to force the recaptured heat through the Reclaimer's blower outlet. By attaching a small duct to the blower outlet, heat can be distributed in basements, attached garages, laundries, work shops and similar locations.

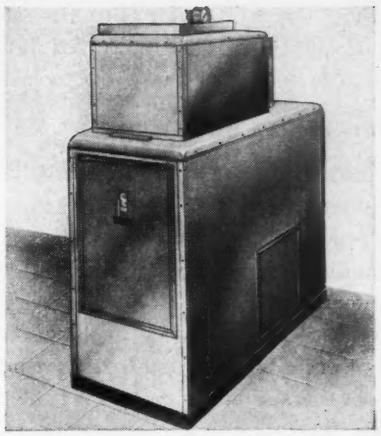
Alnor Type 500 Pyrometer Checks Panel Temperatures

ALNOR TYPE 500 pyrometer, a product of Illinois Testing Laboratories, Chicago, Ill., is a portable, low range surface temperature measuring instrument, designed to check the surface temperatures of panels in panel heating and cooling installations. Readings between 0 and 150° F. are possible with the instrument, which is equipped with a manual cold end adjuster.

Carter Craft Furnace Units Added to Oilheating Line

WARM AIR CONDITIONERS, which supply domestic hot water and automatically humidify the air, have been added to the oilheating line of Carter Craft Corp., Thompsonville, Conn. The units measure 20" wide, 48" long and 57" high and are delivered completely packaged ready to fire.

Standard equipment includes a built-in combustion chamber and Carter Craft burner with twin-turbo jet head bolted



MONARCH BURNER ACCESSORIES

THE NEW COMBUSTION HEAD

The Monarch G-74 Head embodies an entirely new approach to efficient means for intimately mixing air with atomized oil to provide a highly efficient controlled flame.

Atomizing Nozzles

Preferred Because:

1. Each nozzle is individually tested and checked for capacity against the flow of a calibrated master sample. Capacity tolerances are as low as plus or minus 2½%.

2. Standard nozzles will fire most gun type high pressure burners satisfactorily, but special series are also available for burners requiring specified spray characteristics.

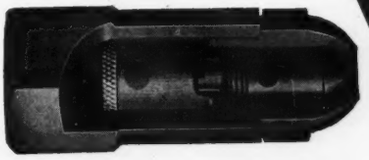
Note these features:

1. Suitable for capacity sizes from .75 GPH to 2.50 GPH.
2. Simple to install and has no external "adjustment" to juggle and there is no "guess work" about the settings.
3. Price—Less than the cost of a good fuel unit.

Send for Circular #1749

Replacement Valves

Monarch piston type pressure regulating and cut-off valves are available in several models to suit most replacement needs. G-49 valves can be mounted in any position and piston will not jam from dirt. Contain no bellows or diaphragm to break or corrode.



Write for Catalog D

MONARCH MFG. WORKS, INC.

2503 E. ONTARIO ST.

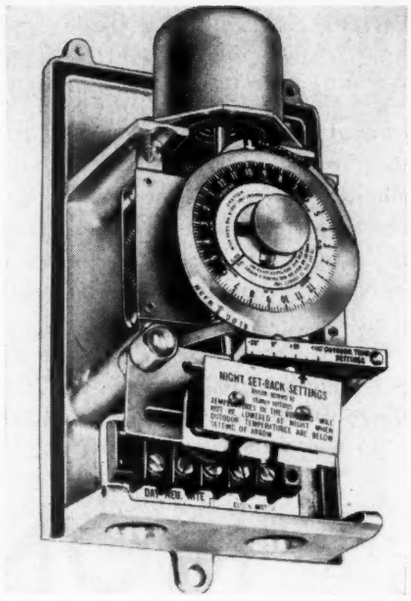
PHILADELPHIA 34 PENNA.

European Distributor: A. Coutau, Rue de la Scie No. 16, Geneva, Switzerland

to floor straps. Register output is rated at 120,000 Btu/hr, designed for installation in homes of from 4 to 9 rooms.

Day-Night Control With Weather-Chron

WEATHER - CHRON, weather - actuated day-night heating control, has been announced by Weather Controls Div., Automatic Devices Co., Chicago 4, Ill. Installed on the outside of a building, the control is wired into the regular room thermostat circuit and set for the time the building is to be warm each



morning and the earliest time the heat may be shut down in the evening. Then, the control anticipates need for heat and automatically changes the time of each cycle, starting heating earlier when it is cold outdoors and compensating for temperature changes by starting later when the weather is milder. During daytime operation, the thermostat maintains building temperatures.

On extremely cold nights when outdoor temperatures drop below a preselected level, building temperatures will be held at the daytime level. When the extreme low is reached after heating has been shut down for the night, heating is restarted regardless of the time. Another feature eliminates all heating when outdoor temperatures rise above 65. If desired, a low night stat may be used as a low limit control.

Superfex Model 4100 With Gun Type Burner

FEATURING a gun type oilburner, designed to burn catalytically-cracked fueloils, Perfection Stove Co., Cleveland, Ohio, has announced the Superfex model 4100 winter air conditioning furnace. The burner employs a two-stage fuel pump and the unit is furnished with a two-stage air circulator as standard equipment.

A triple-flue heat extractor provides a heating surface totaling 6216 sq. ins., with the unit rated at 105,000 Btu/hr output at the bonnet. Model 4100, designed for homes having six or seven average size rooms, is of heavy welded steel construction.

Conco VU-1 Furnace Unit For Small Home Heating

MODEL VU-1 oilfired winter air conditioner, a product of Conco Engineering Works, Mendota, Ill., was developed especially for installation in small homes. It requires 25" x 26" floor space,

McCORKLE CONTROLS

for *Vaporizing Burners*

- **APA-400 SERIES** Automatic Head for AP Float Valve. Provides High-Low operation of both burner and blower.
- **DLA-500 SERIES** Automatic Head for Detroit Float Valve. Provides High-Low operation of both burner and blower.
- **#412 PACKAGE** Automatic Head and Room Thermostat for appliances using natural draft burners and AP Float Valves.
- **#R-458 CONTROL** Designed to provide synchronized air and oil control for manually operated burners.
- **C-2 THERMOSTAT** Room thermostat for all low voltage control systems. Available with Fahrenheit or Centigrade scale.
- **SPECIAL CONTROLS** To meet YOUR specifications—whether a modification of one of our stock controls or an entirely new design. For controls to meet individual requirements, McCorkle engineering and production are at the service of burner manufacturers.

All McCorkle Controls are engineered for ease of installation and simplicity of design. They have earned an outstanding reputation for accuracy and reliability.

D. H. McCORKLE CO.
BOX E · STATION A
BERKELEY, CALIFORNIA

CUT FUEL COST NOW

PATENTED

WITH THE *NEW*
TRU-HEET OIL BURNER
Equipped with
SHELL DEVELOPMENT CO. COMBUSTION HEAD

Also
Many Other New Features

- CO_2 high as 15%—no smoke
- Fuel savings high as 30% and over
- Oil rate 0.50 to 10.00 G.P.H.
- Thousands of proven installations, since 1945

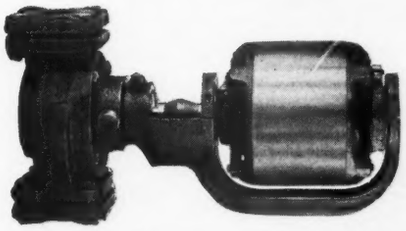
Also Boiler & Warm Air Units

Direct your inquiries to

TRU-HEET COMPANY
542 MILLER AVE.
TRENTON 10, N. J.

Manufacturers of Fine Oil Burners Since 1928.

GLOBE | Hot Water CIRCULATORS



Substantial Savings NOW!

Rugged, perfectly engineered and made of top quality materials. A new, low price . . . lower than other circulators made of the very same materials.

QUIET! TESTED! GUARANTEED!

Bearings
Extra long, oil impregnated bronze.

Water Seal
Patented, rotary type —carbon on bronze.

Motor
Westinghouse or equivalent. 1/6 hp.

Coupling
Neoprene — flexible.

Manufacturers of Low Water Cut-Offs and Controls for a Quarter Century.

GLOBE CONTROLS CO.
81 WARREN ST. NEWARK 2, N. J.

EXCLUSIVE TERRITORIES AVAILABLE

R & I Oil Burner Dealer Supplies

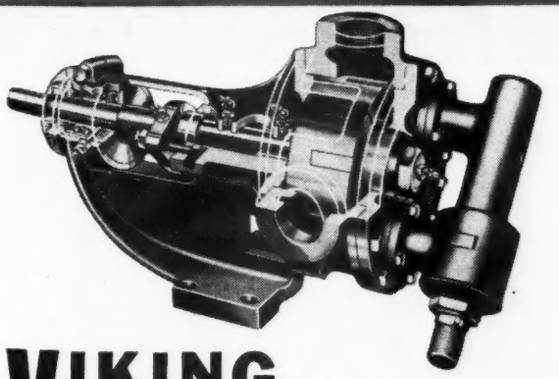
For more than twenty years R & I have specialized in the manufacture of the following products:

Stic-tite Insulating Cement for covering boilers, etc.
Hearth Cement for pouring special shapes, hearths of rotary burners and floors of chambers.
#3000 Refractory Cement for patching.
Combustion Chambers.
Insul-fil Rockwool Insulation for packing between combustion chamber and cast-iron base.
Black Furnace Cement for sealing metal joints.

Your supply house has these R & I products. Write us for bulletin OB-99.

REFRACTORY & INSULATION CORP.
116 Wall St., New York 5, N. Y.
Chicago 4, Ill., Newark 2, N. J., Philadelphia 2, Pa.

MORE OF THE THINGS YOU WANT in a ROTARY PUMP



VIKING...

Gives You These Features:

1. Self priming—Steady and even discharge.
2. Proved simplicity—Only 2 moving parts . . . a "gear within a gear".
3. Slow speed—Long, dependable service.
4. Built to handle the liquid being pumped —No compromise construction.
5. Complete control of manufacture—From factory-owned and operated foundries to final assembly.

Send for bulletin 1500EE today-It will be sent promptly.

See Our Catalog In SWEETS

Viking PUMP COMPANY
Cedar Falls, Iowa

DO ALL SIX CORRECTLY!

DWYER TRANSPARENT COMBUSTION TEST SETS

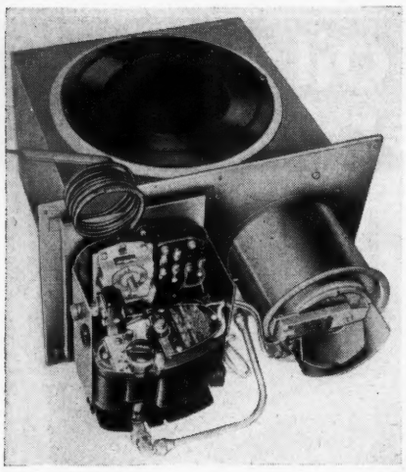
1. Determine proper CO_2 content
2. Check for air leaks
3. Adjust air controls
4. Know draft conditions
5. Level burners and controls
6. Find stack temperature readings

DWYER Combustion Test Set includes CO_2 Indicator, Visi-Draft Gage and Level and Stack Thermometer . . . every instrument necessary to do these jobs ACCURATELY. Durable carrying case, all accessories and instructions.

DWYER Bulletin 220 sent on request - Describes this set and other styles.

F. W. Dwyer Mfg. Co.
315 SOUTH WESTERN AVENUE, CHICAGO 12, ILLINOIS

fuel oil & oil heat



lending itself to application in alcoves, closets or utility rooms. Baffling keeps the casing cool so that the unit may be installed on wood floors and all moving parts have been enclosed to prevent tampering or unauthorized adjustments.

The unit is fired with the new Conco stainless steel vaporizing burner—as shown in the illustration. Special air inlet design and ring construction were engineered to produce a quiet, clean flame. Blue flame pilot prevents system from cooling off when there is no heat demand.

Palmaire Humidifier Is Automatic, Portable

A COMPLETE UNIT, developed by Palmer Mfg. Co., Phoenix, Ariz., is the Palmaire automatic humidifier, employing

a rain-drop dripper system to filter, wash and moisten the air. A slow speed motor and fan draw air through dampened filter pads adding moisture, and filtering the air, which then is expelled through a chromium grille in the top of the unit.

Water is recirculated constantly by a small centrifugal direct-driven pump from a 3 gal. reservoir. The unit, which is 11" high, 9½" deep, 16" long and weighs 20 lbs. packed for shipment, disperses 12,000 cubic ft. of washed air per hour. It may be connected for automatic water refilling.

American Trak-Truks Feature Crawler Base

A CRAWLER-TYPE hand truck, offered by American Machine Works, Inc., Racine, Wis., handles loads up to 500 lbs. Equipped with a crawler-base or carriage with continuous rubber belts, the front wheels of the base are provided with automobile expansion-type brakes, operated by a cable pull on the truck handle. This permits the operator to hold a load in any position on an incline, or move it downwards safely at controlled speed.

Two rubber endless belts on the base run over grooved aluminum wheels, which are mounted on anti-friction bearings and two belt guides have built-in roller supports for the belts. To transport loads on level surfaces, the Trak-Truk can be converted into a conventional truck by retracting the crawler base and operating the truck on the low-

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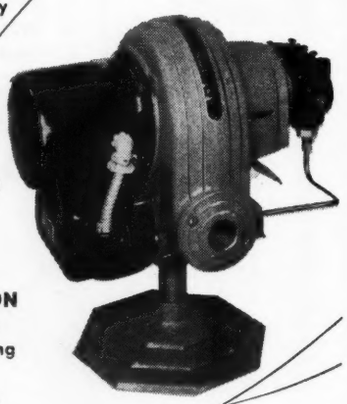

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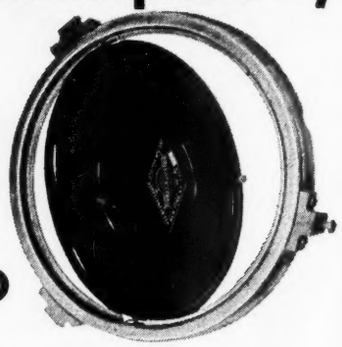

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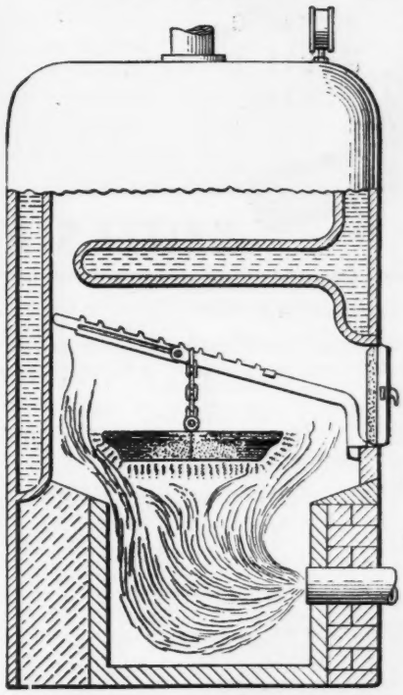

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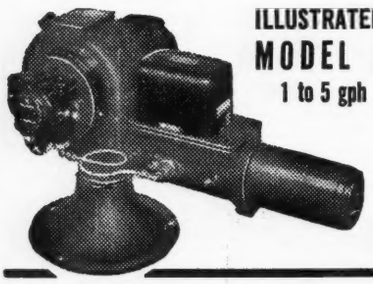

ILLUSTRATED
MODEL L
1 to 5 gph

U. S. oil burners offer much more in performance and fuel economy—for much less in proportionate cost.
One of the oldest manufacturers of oil burners, if not *the* oldest, U. S. has kept abreast or ahead of the times in burner design and mechanical engineering.
3 models are available, 1 to 5 gph, 4 to 8 gph and 7 to 16 gph . . . a range to cover almost any heating specification.

Write, wire or phone for detailed information.

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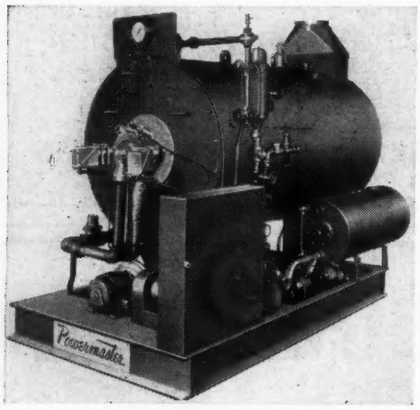
er wheels, with the belts acting as tires. Heavy tubular frame stock, formed and welded, is employed.

Powermaster Generators Use Three-Fuel Burner

POWERMASTER steam generating units, announced by Orr & Sembower, Inc.,



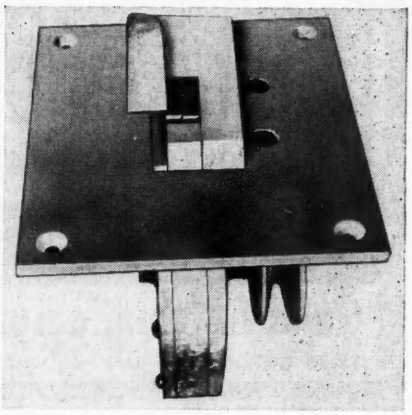
Reading, Pa., feature ability to burn light oil, heavy oil or gas with the same burner. Units range from 15 to 200 hp and are fully automatic. Other advantages are modulated control of flame volume, tubes accessible for cleaning through a free-swinging rear cover, new air atomizing burner and an electronic fire-eye for oil and a flame rod for gas operation to shut off the system in case of flame failure.

Cedarberg Announces Circular Gas Torch

NO. 70 CIRCA-TORCH, offered by Cedarberg Mfg. Co., Minneapolis 15, Minn., features jaws which open and close around a pipe so that six jets heat the entire circumference at once. Intended primarily for sweating tees and elbows, the torch will heat a pipe up to 2" in diameter. It is particularly useful in spots inaccessible to the single tip torch. Entire unit is 4" by 14½" and weighs approximately 2 lbs. It can be laid down while in operation without relighting and can be attached to any tank, with the proper increaser or reducer.

Besco Power Driven Shear Run By Motor Or V-Belt

A SMALL POWER DRIVEN shear, developed by Besco Mfg. Co., Cincinnati 2, Ohio, is designed for mounting flush with the top of a work bench and can be powered by V-belt drive or by electric drill mounted underneath the bench. Unit is



adaptable for slitting, trimming and contour cutting in sheet metals and similar materials. An operator can follow straight or curved lines to a radius of about 3" in metal of 18 gauge mild steel.

Integral features combines simplicity of design and mechanism with special alloy steel component parts, precision machined and finish hardened, with ground interchangeable cutting blades. The shear measures 6¼" in height, with a bed plate 5" x 6", and weighs 6½ lbs. Maximum power requirements are ¼ hp., 1800 rpm motor and drives, or a 5/16" chuck electric drill motor direct connected to shaft.

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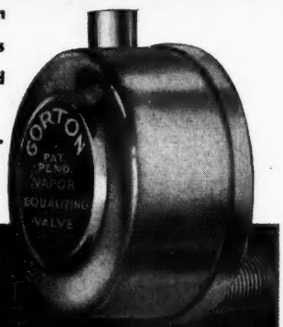

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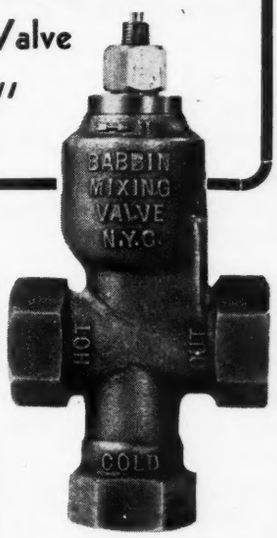

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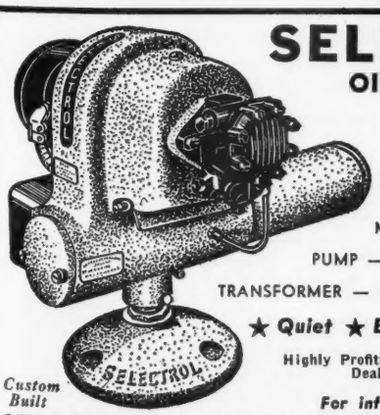

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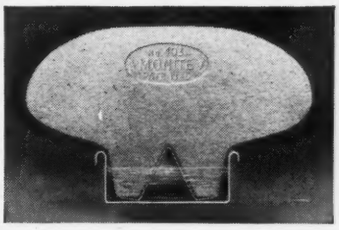

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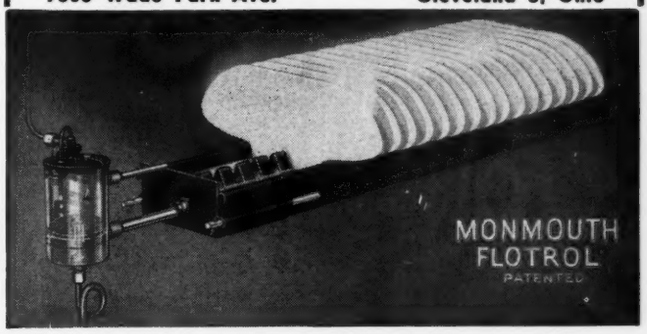

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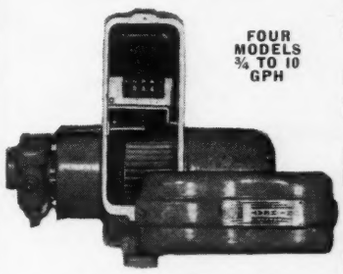

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Order from your supplier or from

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Smoke Rating Analysis

(*Continued from page 53*)

terms of the level of the smoke rating reached and the amount of time required for the smoke rating to drop to zero after the burner had gone off. Readings were taken every 10 seconds from the instant the burner shut down.

In both cases, the minute the burner shut down, there was a sharp increase in the smoke rating within from 5 to 8 seconds regardless of the type of cutoff valve. The unit equipped with the special cutoff valve and adjusted to run at #3 smoke rating increased at the shut off from the #3 rating to an 8 plus rating in six seconds, an increase of 5½ ratings on the Bacharach-Shell Scale. The burner equipped with the conventional pressure cutoff valve increased from the #5 running rating for which it was adjusted to an 8+ rating in five seconds, an increase of 3½ ratings on the Bacharach-Shell Scale.

The sharp increase in the smoke rating in such a short period of time during the closing cycle, demonstrates the sensibility of the average burner to any disturbance of the oil-air ratio and the rapidity of the disturbed combustion's response to this, in the form of increased smoking. Smoke at the time of the closing cycle is doubly important, as it is sure to settle in quantity upon the boiler surfaces. This being due to the fact that it lacks the thrust and motion imparted to it as kinetic energy by the fan. Instead of being pushed out of the boiler by the momentum imparted to the gases by the fan and draft, it lazily settles on the boiler surfaces in the form of soot. Multiply this by the multitude of times a burner shuts down during the winter, generating this smoke each time, and it becomes of considerable importance to the absorption efficiency of the boiler.

The graphs (#4 and #5) show the length of time the smoke continued and, of course, the length of time it took to dissipate entirely, one being a function of the other. With a special pressure cutoff valve it took exactly 50 seconds for the unit to come down to the zero smoke rating, while with the unit equipped with the conventional shutoff valve it took 80 seconds to drop from the same 8 plus rating to the zero rating. This demonstrates the fact that with a conventional shutoff valve the burner smoked for 30 seconds longer or for an approximately 40% longer period of time. Viewed in the percentage light, this 30 seconds is a considerable amount of time. Multiply it by the number of times a burner goes off throughout the year and it will represent a considerable amount of deposited soot that will be reflected in higher stack temperatures and a decreased absorption efficiency.

Conclusions

1. All the foregoing data accumulated throughout the tests demonstrates that smoke and its measurement are of considerable importance in determining the actual running efficiencies of domestic oil fired units, and that along with a good operating CO_2 the smoke rating should not be allowed to go much above the #3 point for cast iron boilers and high pressure gun type burners. Part I of this article demonstrates this.

2. The use of light firebrick, although not having the wearing qualities of heavy brick, would seem to act as a deterrent to smoke on the starting cycle. This would become of increasing importance

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REDUCE HEAT LOSS . . .
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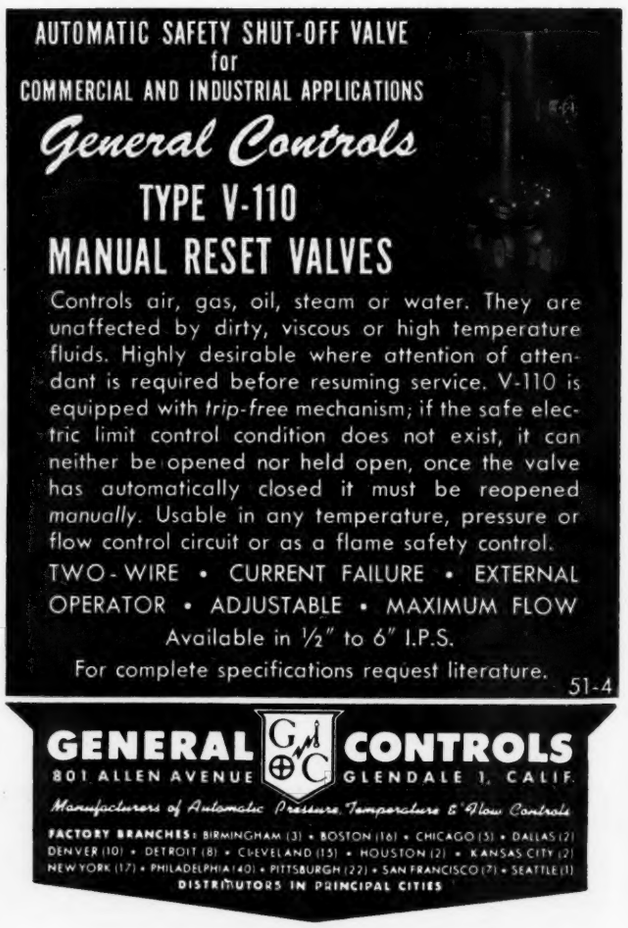
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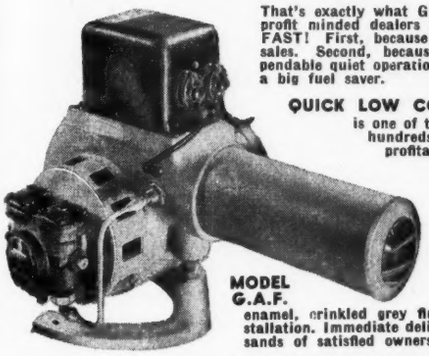

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is one of the features that is enabling hundreds of dealers to make QUICK profitable SALES with the G.A.F.

MODEL G.A.F.
A complete unit, ready for installation, with standard controls. 1/6 H.P. Motor. Blower tube in 3 lengths (7", 10", 13") 3 gal. per hr. max. cap. Baked enamel, crinkled grey finish. Ready for quick installation. Immediate delivery in any quantity. Thousands of satisfied owners.

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CONVERSION BURNERS UP to 20 gals. Capacity
Complete line of conversion burners up to 20 gal. capacity. Also an extensive line of winter warm air conditioners, oil fired boilers, commercial water heaters. If you want to GET ACCOUNTS FAST this spring—remember, valuable dealer franchises are still open. Write or phone today.

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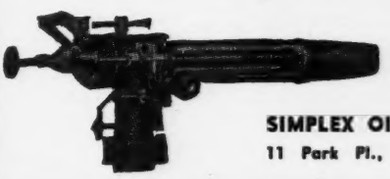

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True-Spot *smoke tester used in the tests described in the accompanying article.*

as nozzle sizes decreased.

3. The use of an additional device to assure a quick cutoff will decrease the length of time after-smoking will endure, but it will not materially affect the height level to which the smoke rating will rise during the first few seconds after the burner has shut down.

◈

Bert E. Dinsmore, named to the newly created post of sales manager, Oil Heater Div., Guiberson Corp., Dallas, Texas, will be in charge of an expanded sales program.

Oil For 264 Years

(*Continued from page* 47)

"In the Bruceton laboratories, a basically new approach to the problem of synthetic liquid fuel production by direct hydrogenation of coal is under investigation," he reported.

The new method is a departure from the conventional Bergius process utilized by the Germans, according to Dr. Storch. In the Bergius process, it was explained, coal dust is mixed with oil to form a paste, which is then treated with hot hydrogen under a pressure of more than 2,000 pounds per square inch.

The Bureau of Mines engineers are trying to achieve better results by using moderate pressures and relatively high temperatures, Dr. Storch said, noting that under these conditions a substantial amount of the coal is turned to coke, which can be recovered and burned to furnish heat for the process.

"The cost of compressed hydrogen constitutes about 50% of the total cost of liquid fuels prepared by hydrogenation of coal," he continued. "Another large fraction of the total cost comprises capital charges on the investment and maintenance of the equipment. Our program of process development is centered about possible reduction in these two large cost items."

Laboratory experiments have disclosed that under appropriate operating conditions it is possible to replace pure hydrogen with comparatively inexpensive water gas, a mixture of hydrogen and carbon monoxide widely used as a fuel, Dr. Storch reported, adding that an estimate of the savings to be expected from this discovery is being made by the demonstration plant staff at Louisiana, Mo. Similarly, it is also possible to substitute for hydrogen the light, gaseous by-products of the hydrogenation process.

An entirely different process, in which the coal is dissolved before being treated with hydrogen, is also under investigation, he revealed. Research is now directed at determining the best solvent and also at discovering suitable catalysts to speed the hydrogenation under these conditions, he stated, explaining that the process would be conducted at relatively low temperatures and pressures.

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The Monarch G-74 Combustion embodies an entirely new Head 12%CO_2. .75 GPH to 2.50 GPH.

Burns catalytic oils.

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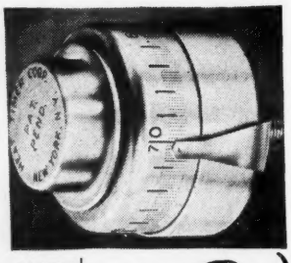
THERMOSTATIC

RADIATOR AIR VALVE

SAVES FUEL



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Replaces ordinary air valve. Radiator heats only when temperature drops below valve setting and shuts off vent when setting is again reached. Can be used in any one-pipe steam system.

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